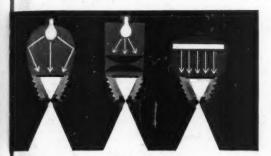
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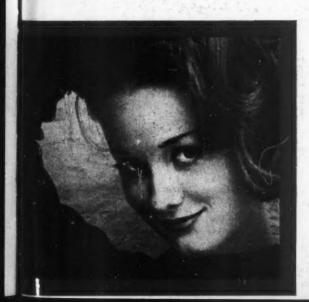
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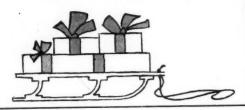




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Ansco

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PICTURE TAKING IDEAS

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IACQUELYN BALISH, Editor

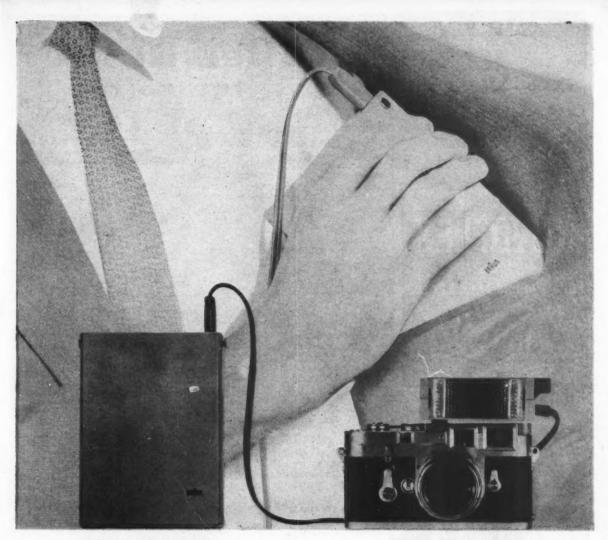
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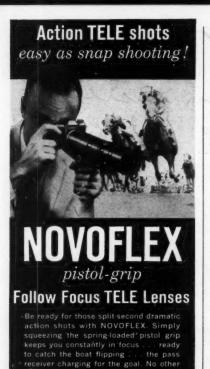
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Coffee Break WITH THE **EDITORS**

THIS MONTH'S COVER . . .

. . . signposts your way into another something-for-everyone issue. Starting in the northwest, under the Arctic region of "January 1960," you'll come across an artist's impression of the three basic types of enlarger-condensing, diffusing, and cold-lightabout which Edward Meyers has a good deal more to say on page 64.

Veering southeast, you'll see a Picasso subject both in the flesh and in paint (the latter, as you can guess, dates back a good many years). On page 70 you'll find out how Alexander Liberman, photographer of painters, gets his exquisite color reproductions.

In the southwest corner, Dan Budnick's picture of his wife Toby shows the subtle lighting effect you can get with tiny flashbulbs-more about that on page 92.

Now move due east, and-"Here be dragons," are you thinking? Don't be alarmed, that long-snouted monster is a harmless 21/4 reflex, grown on scraps and thoroughly house-trained by Herbert Keppler, who tells the story on page 80.

There's a lot more in this issue, of course, but art director Ernest Scarfone hasn't yet worked out a way of putting all the contents on the cover. He's still trying, though.

TRUTH IS STRANGER . . .

We thought ourselves pretty clever last month, coming up with an absurd idea like filming a Western in Brooklyn (see "Blowing Trumpets"). No



Yes, this is a Western . . .

sooner had we packed that item off to press than the British magazine Amateur Photographer brought news of a Western filmed in an urban setting which is way, way east of Brooklyn. Black Ace Rides Again was produced

by the Wimbledon Cine Club-yes, the Wimbledon of tennis fame, in the suburbs of London. Says the director: "We were able to find in Wimbledon a corral, saloon, running stream for gold prospecting and streets suitable for backgrounds." And what about the wide open spaces? No trouble at all-



. . . but is he a Westerner?

Wimbledon boasts an extensive and grassy common.

We gather that the movie is not meant to be taken too seriously—the hero "gallops" across the prairie in a jalopy; "Deadwood Gulch," says a signboard, "Welcomes Careful Riders." But the cast and their costumeswhich they either rummaged out of closets or made for themselves-look remarkably authentic.

Must say, though, that the whole thing shocks us somewhat. Cockney cowboys? Really, it isn't . . . tennis.

SMOKERS BEWARE . . .

A certain person who sits not one hundred yards from our desk recently sent his exposure meter to the manufacturers with a complaint that it wasn't working properly. In their reply they stated that "a large amount of tobacco particles was found in the mechanism and photocell assemblies," and went on to explain that "foreign matter in the air gap of an electrical instrument can cause it to malfunction." Hm.

Just in case our man couldn't draw the necessary conclusion, they added: "We suggest you protect your instrument as much as possible in the future from . . . tobacco particles."

Well, all you smoker-photographers, have you looked to see what state your pockets are in?

(Continued on page 8)

Rolleifle* "F" provides everything wanted in a truly automatic camera!



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COFFEE BREAK

(Continued from page 6)

PICTORIAL PUNS . . .

We all know the gag of putting two incongruous but visually alike pictures side by side—a chimpanzee, for example, and a dignitary in a similar simian attitude. Now a MODERN reader has come up with a new twist repairing off incongruous pictures which can be given the same title.

M. Lasky, of Chevy Chase, Md., whose pot shots are shown below, calls it photographic alliteration. We call it punning. Whatever you call it, we



Pots, animate and inanimate.

think it's an amusing idea. We're already dreaming up other pairs, like Cats (cool and domestic), Pitchers (baseball and ceramic), and Traps—mouse and talkative).

But if Mr. Lasky carries on with his idea—and we hope he does—what better theme to follow Pots than Pans (culinary and human)?

THE LAW AND THE CAMERA . . .

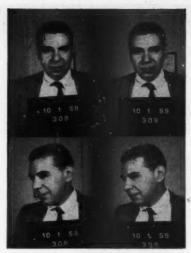
Our man, Associate Editor Myron A. Matzkin, found himself rubbing shoulders with the law recently. He claims it was his first experience, socially or otherwise. Here's his account of it:

Dropped in at National Conference of Chiefs of Police at Statler-Hilton in New York. Modern lawman is just as liable to draw a 35mm (camera) as a 45 (Colt). Happy to report no one looked like Matt Dillon or Wyatt Earp. In fact, except for display of assorted guns, clubs, badges, flashing lights, and something called an interrogation kit, could have been a businessman's convention.

First thing spotted was Bino-Phot—combination binocular and telescope. Not new, but gave us nice feeling to know that ultraminiature photography had made it with the law.

Private eye-ing (impolite people call it eavesdropping). Overheard:

"Lady, that's where bullets go. . ."
"This would be the safest place in the



Four-in-one police shot of an editor.

world for a crook. There isn't a cop on duty in the whole joint." (Most often used wisecrack of conference.)

"Who needs it?" (It being pistol that looked as though it had strong, lifelong ambition to become cannon.)

Making way past lie detectors, tommy guns, speed recorders (latter, efficient looking enough to make us forever watch speed limit) and other useful but intimidating equipment, came to Fairchild photographic booth.

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Win new creative freedom with a Kodak automatic electric-eye camera

There's a new kind of picture-pleasure in Kodak's automatic cameras.

Freedom sums it up. Freedom from computing or even thinking about exposures. Freedom to concentrate on pictures, not technicalities.

The Kodak Automatic 35 (below) gives you full automatic range-f/2.8 to f/32... for films 10 to 160 ASA.

The electric-eye control meters the light, sets the lens automatically—for correct exposure every shot!

You enjoy fast thumb-lever film advance, projected luminous-frame viewer, fast focusing by zones. A great value at \$84.50.

The Brownie Starmatic Camera (left) is a fully automatic camera for 127 film. Has a sharp f/8 lens. Only \$34.50.



Kodak Generator Plasholder never needs batteries. Twist knob, shoot! For 5, 25, M2, M5, M25 bulbs. From \$13.95.



Kodak Rotary Flasholder fires 6 bulbs in sequence. Ideal for fast shooting, parties, child shots. From \$10.95.



Kodak Supermite Flasholder, ultra-compact, uses new allglass AG-1 bulbs. Has Kodalite fittings. \$3.95.



Kodak Midget B-C Flashpack converts penlite flasholders to dependable battery-capacitor operation, \$1.50.

Law caught up with us heremugged by Fairchild ID camera. Device incorporates Polaroid camera to take four photographs on one piece of Polaroid film. Lever cocks camera and positions it to shoot the upper half of film. Prism mounted in front of lens records two images of same subject when you snap the shutter. Work the lever again and two more images are photographed on the lower half of the film for pictures in a minute. Won't sell much film if that sort of thing

A Mr. Sass of Fairchild's industrial Products Division told us women are most enthusiastic sitters for quadruplicate-portrait camera—they "love pictures it takes."

On leaving conference, passed police badge display. Quick inventory led us to believe Western police favor larger badges than Eastern brethren. In fact, some badges looked big enough to hide a camera—an ultraminiature camera, at least.

IN NEXT MONTH'S MODERN

What are the real differences between 35mm prism reflexes? Bennett Sherman gives you the inside dope.

SALON Calendar

*9TH INT. SALON OF PHOTOGRAPHY, Valparaiso, Chile

Closes: Jan. 31 Exhibit: Mar. 17-31 Fee: \$1 for four prints \$1 for four slides Sponsor: Club Fotografico y Cinematografico de Valparaiso

Entry Forms: Club Fotografico y Cinematografico de Valparaiso, Casilla No. 1907, Valparaiso, Chile

*11TH INT. SALON OF PHOTOGRAPHY, Singapore

Closes: Jan. 8 Exhibit: Feb. 12-21 Fee: \$1 for four prints Sponsor: The Photographic Society of Singapore Entry Forms: P. L. Chan, 96 Market

St., Singapore 1, Malaya 24TH ROCHESTER INT. SALON OF PHO-

TOGRAPHY, Rochester, N.Y. Closes: Feb. 8

Exhibit: March 4-27 Fee: \$2 each print section \$1.25 each slide section Sponsors: 15 organizations Entry Forms: J. Lawrence Hill, Jr., Exhibits Director, 643 Highland Ave., Rochester 20, N. Y. 1960 SEATTLE INT. EXHIBITION OF PHO-TOGRAPHY, Seattle, Wash.

Closes: March 21

Exhibit: April 6-May 1 Fee: \$2 for four prints or \$1.25 for four slides

Sponsor: Seattle Photographic So-

ciety
Entry Forms: for prints, Herbert T.
Griffith, 310 W. Highland Dr.,
Seattle, Wash.; for slides, Miss
Dorothy M. Smith, 6003 32nd
Ave., N.E., Seattle, Wash.

PHOTOVISION AUSTRALIA 1960, Melbourne, Australia

Closes: Apr. 1 Exhibit: May 3-13

Fee: \$1 for two entries (categories are prints, slides, movies)

Sponsor: United Moggs Organization, Museum of Modern Art of Australia

Entry Forms: G. Berry, 107 Grove Hill, South Woodford, London E.18, England

64TH ANNUAL OPEN INT. EXHIBITION OF THE BIRMINGHAM PHOTOGRAPHIC SOCIETY, Birmingham, England

Closes: Jan. 9 Exhibit: Feb. 6-20

Fee: \$1, plus postage, for four prints; \$1, plus postage, for four

Sponsor: Birmingham Photo-

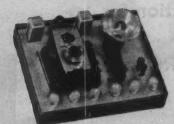
graphic Society Entry Forms: E. H. Cochrane, 142 Swanshurst Lane, Moseley, Birmingham 14, England

(Continued on page 120)

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Most for the money, because the flasholder is built right in. Brownie Starflash Outfit makes color slides, black-and-whites, or color snaps . . . indoors or out. Complete with batteries, bulbs, film, \$10.35. With red, white, or blue camera, \$10.95.



Quick, easy zone focusing . . . plus big, brilliant reflex finder to train the young eye . . . makes the Brownie Reflex 20 Camera a top choice. For color or black-andwhite. Outfit complete with Kodalite Midget Flasholder, \$22.95.



Two finders help the novice find his best "viewpoint." Eye-level or waist-level, Brownie Twin 20 Camera has both. Takes slides or snaps... sets for close-ups, groups, scenes. Outfit with new Kodak Supermite Flasholder for all-glass AG bulbs, \$16.95.

Kodak films, filters and lenses



Kodak films give you complete choice of type and speed. Ultraspeed Kodak Royal-X Pan . . . fast Kodak Tri-X Pan . . . fine-grain Kodak Plus-X Pan . . . micro-fine-grain Kodak Panatomic-X Film . . . and all the famous Kodak color films.



Kodak filters give you full control of pictorial situations . . . increase contrast, reduce hase, heighten cloud effects, let you manipulate tone values in black-and-white shooting. Ask your Kodak dealer,



Kodak Ektar Lenses, for press and view cameras, give you unexcelled sharp-ness, color correction. Supplementary Kodak Portra Lenses allow close work. Ask your dealer about the

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Prices are bist, include Federal Tax where applicable, and are subject to change without notice.

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LETTERS TO THE EDITOR

He Likes Caponigro

You have an unusual "Discovery No. 44" in the August issue in Paul Caponigro.

His West Coast training and darkroom techniques have made the top echelon in creative photography here on the East Coast re-evaluate their methods.

Thanks for showing us a creative talent. He projects, through the eye of the camera, his method of seeing the everyday scene and shows us how to find beauty in any surroundings. No. Quincy, Mass.

Mrs. Joseph A. Martell

Lesson in Girl Watching

In August issue, the article "How to Photograph a Girl" with accompanying pictures:

I am glad you told us it was a girlyou could never tell it by the pictures. If those pictures are good photography or photo-art, there's surely a lot of us who are no longer photographers.

Really, I was quite disgusted with such a display of pictures. Columbus, Ohio

S. Ellsworth Nothstine

Editor's note: The editors (male type) of MODERN have been girl watchers for many years. However, even junior editors on the staff-without the extensive experience of their elders-had no trouble with Mr. Budnick's pictures of his wife. In fact, on first sight, one staff member was overheard to say with a suitable accompanying whistle "Now, that's a girl." We feel he shows great promise.

A "U.S." Curtain?

Sirs:

I have just read in your editorial column about the showing in Russia of "The Family of Man." I note that "Many visitors . . . were carrying

cameras." I also recall that when the same exhibit was shown in Philadelphia visitors who were carrying cameras were refused entrance to the show until they checked their cameras outside. I'm sure there is a conclusion to draw from this, but damned if I know what it is. Maybe you could ask Mr. Steichen sometime? Souderton, Pa. Ray L. Albright

Editor's note: No deep conclusion to be drawn, Mr. Albright. As far as the "Family's" organizers were concerned, cameras were welcome. The final decision rested with the local museum or hall that housed the exhibition.

A Reader Agrees

Sirs:

No one spoke with more truth than Mr. Herbert Keppler did in his article in your July issue in reply to Mr. "Anonymous" challenge [on the morals of advertising and TV].

Mr. Keppler should be congratulated for his frankness. W. F. Johnston Glendale, Calif.

Readers We Hate to Lose

Sirs:

I have just received your reminder and note that my subscription will soon expire to your most wonderful magazine, but I am afraid I will have to say I am sorry to ask you to cancel my subscription . . . The reason, I am now

THE MORE YOU KNOW ABOUT PHOTOGRAPHY...THE MORE YOU WILL COUNT ON KODAK

Finest automatic projection for your slides . . . with a

The Kodak Cavalcade does everything you could ask of a projector... even makes you a guest at your own show!

Just tell your Cavalcade Projector what you want-

. hands-free automatic changing at 4-, 8-, or 16-second intervals . .

. . remote control, with Model 510, from the comfort of your chair . .

.. direct control from projector-side, by push button or manual wheel . . .

back up, repeat slides, skip back and forth at will . .

. . lift out any slide, re-orient your show, with finger-tip editing ejector -no need to remove the slide tray!

With either Cavalcade, you enjoy 500-watt brilliance, "no-pop" focus, crisp clean detail from corner to corner of your screen.

The more you learn about slide projectors . . . the more you'll want a Kodak Cavalcade. Model 510, f/2.8, \$159.50. Model 520, f/8.5, \$124.50.



74 years old and have sold my entire photo equipment and business. However, I have enjoyed your magazine for many years, and have received many tips and benefits from its pages.

Please accept my thanks for so many pleasant years reading, and occasionally I will probably get a copy from the news stand, and until we meet again may I say so long, and keep up a good magazine.

I remain most sincerely yours, Union, N. J. George T. Brandt

Gulls or Girls?

Sirs:

Congrats on a great issue [August]—the best of any magazine that I've seen in two or three years.

Budnick really scored on his "How to . . ." Let's have more articles like this, if you find them in the future.

Great report on high speed Ektachrome—well done and very complete. The seagull shot on p.49 was tremendous, almost as good as the pics of girls (pp.47 & cover).

The rest of the issue was also good (mouse shot on p.61). Repeat, great work.

Washington, D. C. Norm Jackson

The Last Word on Infrared

Mr. Keppler:

I was very interested to read your article in the July issue of MODERN PHOTOGRAPHY on "The Mysterious

Case of Infrared." As you know, the subject has been one of great interest to me for a number of years. I have a book on the subject and have provided much of the information that is in our Data Book.

I must agree with you in general about the exposure indexes for daylight, since there is no fixed ratio between the infrared and visible content of daylight for all conditions. It is, of course, a different matter in the case of tungsten light. However, it should be possible for a photographer to set

IN NEXT MONTH'S MODERN

Can you use your prism reflex creatively for color? Saul Leiter says "yes."

up some kind of index for himself which would at least give him a rough guide.

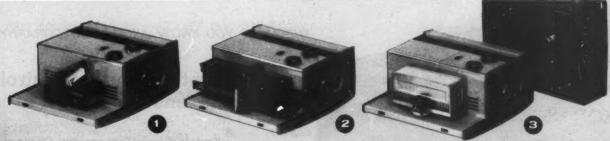
I am not sure that the film and camera in general have to be stored in a light-tight place. Most modern camera body materials and bellows are safe to infrared, and there is no reason for assuming that it can penetrate through the metal of film cartridges.

I was intrigued by your suggestion that the unsharpness of infrared pictures is due to the human body giving off heat, the infrared film recording the heat radiations and blurring the outlines. What a wonderful opportunity that would provide for evaluating individuals, if it were only true! The real reason for pictures being somewhat unsharp is that they are usually made with lenses which are not corrected to give sharp pictures in the infrared. A very few such lenses have been made, particularly for aerial photography, but in general lenses would not be expected to give the sharpest pictures by infrared.

Your suggestion reminds me of the question of the alleged human aura which comes up from time to time. Somebody discovered that if he looked at one of his friends through a dichroic filter, letting through narrow bands of red and blue light, his friend showed up with a glow around him which was attributed to his aura. It is, of course, nothing of the kind; it is due to the fact that the eye finds great difficulty in focusing the narrow band of blue and the narrow band of red simultaneously, and the effect is this blurred outline. In a sense, this is the case with ordinary lenses used for infrared photography—they cannot focus both the visible and the infrared equally well.

I am delighted that you really want your readers to go out and do infrared photography. Some very amusing or striking results can be obtained, even though fuzzy.

Rochester, N. Y. Walter Clark Eastman Kodak Research Lab



Kodak 300 Projectors give you all three changers! Everyone wants big, bright pictures, carefree convenience, but not necessarily the same changer. So, you can choose your Kodak 300 Projector with...(1) push-pull Kodak Readymatic Changer for cardboard mounts, \$64.50

... (2) Kodak Universal Changer that takes all kinds of slide mounts, \$69.50...or (3) Automatic Magazine Changer, \$74.50. A Kodak 300 Projector is easy to carry, flat, self-cased, weighs only 9 lbs. Gives you bigger screen images: 4-inch lens fills a 40-inch screen from just 10 feet back.





Enjoy sildes anywhere . . . new Kodak Illuminated Pocket Viewer gives you 4× magnification , . . folds to fit pocket or purse, \$5.95.



Color film for 35mm slides and prints...ever-popular Kodachrome Film... versatile Kodacolor Film... and new daylight-index-160 Kodak High Speed Ektachrome Film. The more you know about photography... the more you count on Kodak films.

Prices are list, include Federal Tax where applicable, and are subject to change without notice.

PICTURES in a MINUTE

by JOHN WOLBARST

Testing a competent little exposure meter to go with Polaroid's amazing 3000-speed film.



The new 3000speed Polaroid Land film makes it possible to take pictures indoors without need of flashbulbs. This film is so sensitive to light that in ordinary livingroom illumination

you can make snapshots, and in offices or stores evenly lighted with fluorescents, it's as easy to make pictures in a minute as it is to make snapshots

BUT-and it's a big but-you have to be able to measure the brightness of the light in order to get correctly exposed pictures. Otherwise, you'll be

wasting film while guessing at exposures. Until recently, none of the Polaroid exposure meters was sensitive enough to be of any value in the low light levels at which the new ultrafast film would be most useful.

Now Polaroid Corp. is marketing the #625 exposure meter (\$16.95). After trying it out rather carefully I'm impressed by its performance. The #625 is a smallish meter, made in West Germany. Unlike many meters of its size (and with even less sensitivity) it does not have one of those nervous needles which jump around so easily that it is almost impossible to get them still long enough for an accurate reading. This needle's movement is well damped and it settles down quickly after moving.

The meter has only a single range of sensitivity. In the past, I have found such meters inadequate in dim light. Not so the #625. To my surprise I found that it was sensitive enough to make an accurate reading where the required exposure with 3000-speed film was EV 10. That's the lowest number on the snapshot scale of current Polaroid Land camera (same as exposure number 1 on older models), except for the Model 110A Pathfinder.

The meter would not be sensitive enough to register where the light is so dim as to demand the maximum picture taking abilities of the Model 110A. For example, where you might need an exposure of ½ second at f/4.7 (equivalent to EV 5½) when using 3000-speed film, this meter would be of no value. However, that's not surprising. I don't know of any meter on the market that could make such a reading. Closest to it would be the General Electric PR-3 with Dynacell attachment, which can give a barely discernible reading of EV 6. The Weston Master III is virtually unreadable when EV 9 is indicated, and it's not easy to make out EV 10. So, compared against those topnotch meters the little #625 does a remarkable job!

It works in bright light, too

I also tried the #625 outdoors with 200-speed film. It appeared to be just about as accurate in bright light as any of the standard exposure meters.

Considering the relatively poor range of performance and sensitivity of previous Polaroid meters, I would suggest the #625 as an excellent replacement for whatever you're now using. Certainly, if you want to use



Kodak Cine Scopemeter Camera, Turret f/1.9. With the new 8mm Scopemeter you actually see when your exposure

The pointer of the built-in exposure meter is visible in the viewfinder. You just turn a dial to position the pointer and the lens is set automatically, accurately.

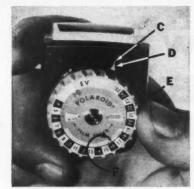
A smooth-turning turret gives you the variety of normal, wide-angle, and telephoto scenes—all shot through a fast f/1.9

You'll find it easy to pick your best shot, because all three lens fields are visible in the enclosed telescopic viewfinder. For easy viewing the eyepiece adjusts to your

Extra luxury features: Type A and Skylight filters are built in; footage meter automatically resets after loading; new mechanism makes film loading easier, faster. \$99.50. Field case, \$7.95.



USING THE #625; Move knob (A) until film's exposure index (3000 here) appears in slot. Aim cell (B) at subject; needle (C) swings as meter measures brightness of light reflected



from subject. Rotate knurled wheel (E) until yellow pointer (D) lines up with needle (C). Note EV number next to arrow (F). Here it's EV 16. Set camera to EV 16 and shoot.

the 3000-speed film, the #625 is a must.

The mechanics of using the #625 are shown in the two photos. Here are some pointers. When using the camera indoors, there are likely to be heavy shadows on one side of your subject's face. Bring the meter close, aim the cell (B) first at the shadow side and take a reading (maybe it's EV 11) and then do the same for the bright side (maybe EV 13). Set the camera for an exposure halfway between these two (EV 12) for the first try.

If you're snapping by daylight (window, etc.) the little arrow (F) indicates the correct EV number to set on your camera. If you're using lamplight, the narrow red mark next to the arrow is the indicator to go by.

If you want to learn more about using this meter and the 3000-speed film, I've devoted a lot of space to them in the third edition of my book Pictures in a Minute, which will soon be in most camera stores. Remember, get the third edition.—THE END

Free Literature

Commercial photographer Murray Zinn discusses the use of flosh in daylight with both black-and-white and color films to cut down on sharp contrast. The brochure's formula and detailed charts show what shutter speeds and apertures to use. For your free copy of How to Chase Shadows with Fill-Flash, write Bright Star Industries, Clifton, N. J.

Models of Star-D Tripods are listed in this illustrated brochure. For your free copy, write Davidson Optronics, Inc., 2223 Ramona Blvd., West Covina, Calif.

Hollywood Tripods and their particular features are listed in this brochure. For your free copy, write Pagliuso Engineering Co., 113 W. Harvard, Glendale 4, Calif.

You'll find out how to shoot coins, stamps, flowers, diamonds and other subjects requiring above-normal magnification in this booklet on close-up photography. For your free copy of Closeup Picture Technique Revealed, write Wall Street Camera Exchange, 80 Wall St., New York 5, N. Y.

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For automatic movie-making on a budget . . .



in

8mm Brownie Automatic Movie Camera, f/2.3. Looking for a real buy in an electriceye movie camera? Then check the Brownie Automatic. An electric eye accurately controls the lens to give you beautifully exposed movies.

A dial adjusts the electric eye for film indexes from 5 to 40. For filming special effects you can use this dial to override the automatic lens control within a range of several f/ stops.

Other fine features; meter signals when light is poor; multi-frame finder shows fields for wide-angle and telephoto converter lenses; footage meter resets automatically.\$74.50. Field case,\$6.50.



Brownie 2-Lamp Movie Light Puts light where you want it to make indoor movie-making easy. Pistolgrip handle and 8-foot cord included. \$5.95. Lamps are extra.

Prices are list, include Federal Tax where applicable, and are subject to change without notice.

EASTMAN KODAK COMPANY, Rochester 4, N.Y.

Kodak

New Photo Books

EYE, FILM, AND CAMERA IN COLOR PHOTOGRAPHY, by Ralph M. Evans. 410 pages, Illustrated. John Wiley & Sons, 58.95

Seldom has a more fascinating and useful photographic book come our way. Ralph M. Evans, Director of the Color Technology Division of the Eastman Kodak Company, is known primarily for his writings in the technical field of photography. In Eye, Film, and Camera in Color Photography, Evans explains this first major work applying the psychology of vision to photography as follows: "No one can spend thirty years in color photography, as it has been my privilege to do, without strongly being impressed with one fact. What an observer sees when he looks at a scene, can be and usually is very different from what he sees when he looks at an 'accurate' color photograph of that scene. The contents of this book are the results of twenty years of continuing investigation into this difference in its various aspects."

It is almost impossible even to sug-

gest the scope of Evans' work in a review which would not be half as long as the book itself. There are ten chapters, The Nature of Color Photography, How We See Things, How the Camera Sees Things, Color and Form in Photographs, How Color Photography Works, Subject and Intention in Photography, What This Permits Us to Do, Control in Printing, and Photography as a Creative Medium.

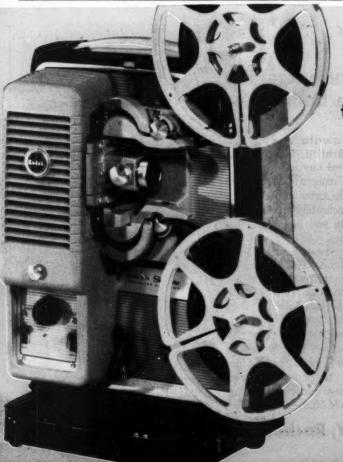
Each chapter is further divided into about 20 sub-headings. Take How We See Things, for instance. The sub-headings are: The Eye and the Brain-Perspective and the Moving Eye, Depth, Motion Parallax, Binocular Vision, Monocular Depth Clues, Unfamiliar Scenes, Size of Objects, The Work of Luneberg, Shape, Things Remembered, Idealization, Desire for Idealized Perception, Form Adaptation, Color and Light, The Color of Objects, Perception of Object Properties, Perception of Reflectance, Perception of Illumination, Perception of Source of Light, Perception of White,

Perception of Gray and Black, and Combinations of Perceptions.

And each sub-chapter is an exquisite jewel of concise, brilliant thought. Let's take one at random, Perception of Object Properties. A small part of it goes as follows:

"Perhaps the most important fact to understand about vision is the extent to which we have trained ourselves from birth to see objects rather than light. We live in a world in which the illumination falling on objects is changing constantly. Yet we believe that the objects themselves have fixed properties which are not affected by these changes. It is these fixed properties that we try to see in ordinary life situations and not their changed appearance due to the light. The artist or the photographer must train himself deliberately if he is to see the total effect.

The net result of this highly developed skill at abstracting the object from its surroundings is to break down any simple relationship that might otherwise exist between the nature of the light reaching the eye and what we see. As a simple example, consider a white tennis ball standing in sunlight. The light reaching our eyes from the ball says the ball is a bright, slightly yellowish color on one side and a dull gray or possibly blue on the other. In ordinary light, however, this is not what we see but a uniformly white ball sitting in sunlight. That is, we separate the illumination from the object and see the object itself. With special atten-



Threads itself right onto the take-up reel-automatically

8mm automatic Kodak Cine Showtime Projector. Let the Kodak Cine Showtime handle the job of starting your show completely!

The sprocket feed courteously takes the film from your fingers... passes it through gate and loop guides... and then feeds it onto the take-up reel and starts the show—all automatically.

The Showtime also gives your movies the impact of size, shows them clearly five feet wide. New high-lumen projection lamp, teamed with a special shutter and pulldown, produces super-brilliant screenings. You regulate forward and reverse projection, power rewind, and "still" from one convenient panel.

Other de luxe features: 400-foot reel capacity, lifetime factory lubrication, quiet motor with powerful cooling system, storage space for 400-foot reel and power cord, built-in-case construction with snap-on cover. See it at your photo dealer's soon. Model A20, \$137.50.

tion, of course, it is possible to see the ball as first described. This, however, is not the usual manner of seeing."

This book is jammed with such items—theories and facts in simple presentation challenging the photographer to see more carefully, understand more fully just what he sees, how it can be photographed, and what he can expect as a final result.—H.K.

IN THE STEPS OF THE PHARAOHS, text by Jean Leclant, photographs by Albert Raccah. 128 pages. Hastings House, 58.50

There are eight full color plates and 62 black-and-white reproductions in this book which attempt a most ambitious journey. Would that the ratio were the opposite, as the color pages point up most clearly the failure of black-and-white to give the reader a proper conception of the ruins.

The problem of this book is simple. It attempts to cover almost 3,000 years of history in one slim volume. It fails. The text and photographs would be fine as an introduction for someone who knows little of the history of Egypt. But it will be too sketchy for others.—J.B.

AARON SISKIND PHOTOGRAPHS, 50 full-page photographs, 112 pages. Horizon Press, \$12.50

This book contains 50 photographs by one of the great photographers of our time, Aaron Siskind. His work is not easy to explain, yet what he does physically with his camera is simplicity itself. His subject matter may be paint peeling off a wall, a bit of wire in the sand, an eroded wooden fence. From this he selects and isolates an image, sharply detailed on black-and-white film. His talent is marked by an economy of means. Nothing exists in his pictures that is not direct, cogent, purposeful.

Here's where the problem comes. I can tell you what these 50 images mean to me, but I could not say what they will be to you. His photographs do not have the same meaning for everyone in the viewing audience. And if the audience does not participate, in the sense of working at looking, it doesn't receive anything at all.

This one fact distinguishes Siskind's work from that of most photographers, which is readily understood on at least one level by everyone. (Who can't understand the message of a mother holding a child?)

Siskind, in brief, is neither entertainer, nor storyteller. He uses the camera as modern painters use their brushes and canvases, to reveal a subjective world of visual imagery.

He has made a giant step, taking photography out of the world where pictures and words have become interchangeable. The camera in his hands is not a literary tool, but a visual one.

The next best thing to seeing an original Siskind print is to buy this book. The pictures are beautifully

presented, one each to a right-hand page, faced by a left-hand page with a simple line of type for a caption. This technique seems to invite the reader to look closely. And the quality of reproduction reaches a high point in printing skill and techniques.—J.B.

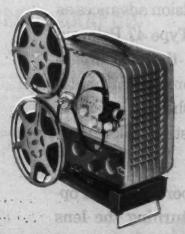
THE LI'ELIEST ART, A Panoramic History of the Movies, by Arthur Knight. 352 pages, 31 illustrations. Mentor Books, 50 cents. (Originally published in hard cover by Macmillan, \$7.50.)

Despite the title, Arthur Knight is not one of those cinephiles whose esteem for a movie is in inverse ratio to its box-office success. His outlook is well balanced: he realizes that the cinema is a mass art, for psychological as well as economic reasons. Photographic images give a powerful impression of reality; and the further a film diverges from simple narrative, the greater the conflict between this apparent reality and the unfamiliarity of the treatment. (To take an extreme example, there are very few convincing dream sequences in the history of the film, because the props and backgrounds look too painfully real.) And this discord can only be resolved if the film's dramatic appeal is exceptionally strong. Depth and subtlety are not enough: the movie must grip the audience directly or not at all.

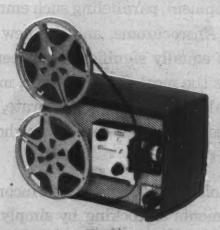
Taking this stand, Knight looks upon the limited-appeal "art" film as

(Continued on page 18)

THE MORE YOU KNOW ABOUT PHOTOGRAPHY ... THE MORE YOU WILL COUNT ON KODAK

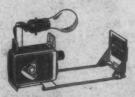


New Brownie 500 Movie Projector screens the brightest 8mm shows in Brownie history. Has 400-foot reel capacity for half-hour shows. Single knob controls forward projection, "stills," reverse, power rewind. Permanently lubricated. \$79.50.

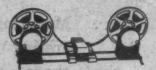


New Brownie 8 Movie Projector is only as big as a portable radio, but it shows your movies crisp, sharp, up to three feet wide. Easy to thread, easy to carry and store. Single knob controls forward projection, rapid rewind. Never needs oiling. \$44.50.

Prices are list, include Federal Tax where applicable, and are subject to change without notice.



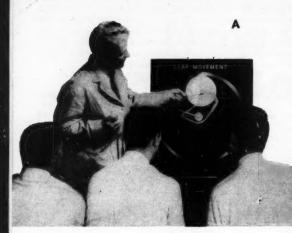
Brownie Movie Titler Outfit makes 8mm titling easy using any Brownie Movie or Kodak Cine Camera. Closeque lens, titling aids included. \$15.95. Uses 31-cent flood lamp (extra).



Kodak Presstape Editing Outfit for 8mm and 16mm movies. Accepts 400-foot reels. Includes rewind, Presstape Splicer, and supply of Presstapes. \$14.95.

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UNIQUE "ORBITAL ACTION" is demonstrated to government, military, professional and scientific authorities by large-scale working mock-up (left, A) which shows shutter leaf at peak acceleration while aperture is still completely closed. Then, at speeds up to 60 feet/second, the leaves open (right, B) . . . "hold" . . . and close in a continuation of the same elliptical movement. Finally, after the aperture is completely closed (right, C), leaves begin to stop with a gentle braking action.

Instead of the start-stop-reverse of the conventional shutter, the '1000' movement is a smooth start-open-sweep around the bendreturn without camera-jarring, damaging shock or bounce.

Opening — and closing —

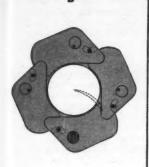
3 times as fast as conventional between-the-lens shutters...

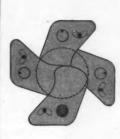
Revolutionary new Graflex shortest, sharpest exposure

More light in less time—at each speed from ½ to 1000th, and at all apertures—gives this remarkably new Graflex '1000' extraordinary action-stopping ability.

Years in development, paralleling such emulsion advances as Royal X Pan, Anscochrome, and the new Type 47 Polaroid 3000 film, this equally significant between-the-lens breakthrough makes the most of these faster, more critical materials. Its orbital action cuts more accurate, sharper "slices of light"... images are sharper—free from ghosting, color fringing, and distortion.

Mounting a choice of fine lenses, and incorporating such operating refinements as cocking by simply turning the lens shade... press-focus control which opens both diaphragm and shutter, whether cocked or released, and returns to pre-settings... and internally wired for optimum synch at all speeds, the Graflex '1000' represents tomorrow's shutter today. See it at your Graflex dealer's. Graflex, Inc., Rochester 3, N.Y. A subsidiary of General Precision Equipment Corporation.





TOTAL EXPOSURE with any given light condition is the product of aperture size X time open. Oscillograph traces (right, D) contrast performance of Graflex '1000' orbital action with conventional between-thelens shutter. Opening—and closing—in less than a third of the usual time, resulting in a longer wide-open phase, the '1000' meets exposure requirements in substantially shorter times—with superior action-stopping ability.

Super SPEED GRAPHIC



1000 shutter stops action in times in camera history!

-and it's first and exclusive with the NEW SUPER SPEED GRAPHIC

Other applications of this significant shutter development are planned but, fittingly, its first introduction is to those to whom the best means the most—to 4 x 5 photographers, in this newest form of their all-time favorite, the new Super Speed Graphic.



GENERAL PRECISION COMPANY



NEW BOOKS

(Continued from page 15)

a tributary to the mainstream of commercial films. Art isn't something that can be added to a movie consciously, like ketchup on cold meat. It is more likely to be achieved incidentally, as new ideas and techniques infiltrate from the small experimental groups into the big commercial studios. Knight's history lays emphasis on Hollywood because, with its enormous output, variety of directors, and discouragement of anything it can recognize as "artistic," it has had, paradoxically, the best opportunity to assimilate art into popular success.

If you're thinking that Knight has set his artistic sights too low, his caustic chapter on DeMille will reassure you. So will his account of what Hollywood did to von Stroheim and other directors. If anything, Knight is a little too kind to the selfconscious "art" experiments of the 20's.

To keep his history down to a manageable size, Knight excludes cartoons and educational films. Also, for simplicity's sake, he treats the film as the director's creation, though he does not underrate the work of the scriptwriter, editor, photography director, composer and so on.

After a brief but adequate survey of the invention of the movie camera Knight devotes the first section of his book to the earliest directors proper, from Melies and Porter down to Griffith and Chaplin. When he reaches the 20's—the maturity of the silent film—he devotes separate sections to Europe and Hollywood. The advent of sound, however, ironed out the deepest national differences in style, and so the next section deals with the development of talkies in general. Then he outlines different trends in the major

IN NEXT MONTH'S MODERN

How to brighten up your home movies using just 2 floods.

movie-producing countries from the 30's to the present day. His final sections deal with the impact of TV and recent technical developments, particularly in screen size and shape.

The whole book is refreshingly free of abstract theorizing—it is a history of films rather than The Film, with plentiful and apt descriptions. When Knight touches on technique, he does so as an alert layman rather than a jargon-spilling expert.

The book's main defects seem to arise from gaps in Knight's direct knowledge of movies. In a few places, there are meaningless lists of film titles and errors of omission. A more serious drawback, in view of Knight's thesis that the best films are also popular films, is that he assesses foreign

(Continued on page 20)

MODERN PHOTOGRAPHY





Standard equipment on leading projectors throughout the world, the all-metal slide magazine is the sign of a quality slide projector and your assurance of expert and enjoyable color slide shows. 36 precision metal frames prevent slide wear and damage, insure carefree projection and always hold slides in place. Look for this magazine when you buy a projector.

Send for free booklet, "Ways to Improve Slide Shows."



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Dept. No. M-1, 20 Jones Street, New Rochelle, N. Y.

NEW BOOKS

(Continued from page 18)

films by their popularity in the States. For Britain, whose films are generally well represented on the neighborhood circuits, this gives satisfactory-indeed, surprisingly good—results. But it gives a distorted view of other countries. French films, for example, only break through the subtitle/dubbing barrier to the general circuits if they have supercharged action (Clouzot's Wages of Fear), visual comedy (Tati's My Uncle) or Brigitte Bardot. In France, where there is no such barrier, directors like Rene Clement and Robert Bresson score heavily in popularity as well as art.

With these reservations, The Liveliest Art can be recommended as a well-thought-out and enjoyable survey. Its value is enhanced by a substantial classified bibliography, a list of organizations which rent out 16mm prints, and a useful index of film titles with dates (the general index, however, has several gaps). The 16 pages of illustrations compress a lot of interest into inadequate space.—W.H.J.

THE SCIENCE OF PHOTOGRAPHY, by H. Baines, 319 pages, profusely illustrated. John Wiley and Sons, Inc., New York. \$7.50

This volume, to my mind, contains perhaps the most brilliantly written, edited, and thought-out explanation of photographic processes that I have ever read.

Despite the fact that the book is British in origin, it is well suited to the American market. Baines, formerly Chief Chemist and Research Director of Kodak, Ltd., Harrow, and now one of Kodak's brass on Kingsway, London, has given many lectures over TV and radio. In addition, he has served twice as president of the Royal Photographic Society. The combination of endeavors has paid off. After a chapter on the beginnings of photography, Baines wades into Light and Optical Images, The Camera Lens, The Camera, The Chemistry of Photography, Light Sensitive Materials, The Photographic Latent Image, etc., as if they all were the simplest things in the world to explain. And Baines doesn't try to bring these somewhat complicated subjects down to the lowest common level of reader. He builds the reader up to such things as reading a chemical formula, understanding the logarithms for interpreting characteristic curves.

Baines is remarkably complete. Besides the everyday photographic considerations, he ambles through Spectography, Radiography, Photogrammetry, Photography in Nuclear Research. He even covers the inner workings of office copying machines!

Baines's writing is fluid and fascinating. His book cannot be too highly recommended.—H.K.

These and other books are available through AMPHOTO; see pages 110 & 111.



The ingenious design and splendid performance of the Contaflex will thrill the most expert photographer. Its ease of operation makes it equally ideal for the less experienced. Gives perfect control for perfect shots.

Contaflex SUPER has built-in exposure meter coupled to the diaphragm. Sighting, focusing and checking of exposure are all combined in one eyepiece. Rangefinder and ground-glass are seen in center of view, needle of exposure meter at right. No obstruction of view. Subject appears big and bright, for it is viewed through the convertible Zeiss Tessar lens at full f/2.8 opening. No para! 2x ever. Synchro Compur MXV shutter has speeds to 1/500 sec.

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Camera is a new 35mm beauty with streamline body in two-tone gray. Has fine Novar f/3.5 45mm lens and Pronto shutter with speeds to 1/200. Rapid lever transports film, cocks and releases shutter.

The compact Ikoblitz 4 BC flash unit attaches to shoe at left end of camera top—out of the way while sighting.

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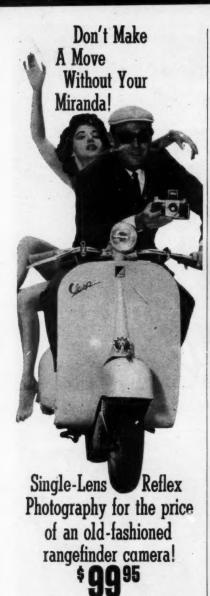


Camera is the latest model with most modern features. Has built-in light meter inter-locked with lens diaphragm for speedy, exact exposure control. Fast Pantar f/2.8 45mm lens. Prontor SLK shutter with speeds to 1/300. Leather carrying case.

The Ikoblitz 4 BC flash unit is noted for its efficiency and compactness.

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The Miranda photographer on the "go" gets a vibration-free shutter from 1/30th to 1/500th sec.; brilliant condenser & fresnel lens viewing; flash & strobe synch.! He interchanges all Miranda and most 35mm camera lenses and accessories. With 50mm f2.8 Pre-set Miranda-Soligor lens & waist level finder only \$99.95.



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What's Ahead?

by LLOYD E. VARDEN

Is accurate color reproduction possible? Better think twice before you give an answer.



A lot of nonsense has been written about color. Some people, otherwise sophisticated, express childish opinions on the subject. For example, a wellknown columnist for a New York newspaper stated

in an article a few months ago that individuals who prefer green colors are lively, carefree, and good partygoers. Those who prefer blue colors are conservative and good moneymakers. These statements were presented as facts!

Of course, there are certain relationships between color and human attitudes which have been proven. A Dr. Hibben once arranged a special dinner party to see what would happen if typical foods were made to appear different from usual in color. He illuminated the table so that steak appeared grayish, celery pink, salads bluish, peas black, and so on.

It is reported that most guests lost their appetities altogether and those who did eat became ill. Such an experiment shows only one thing for certain—that we are hidebound by conventions. Be wary of accepting the results of such tests as proofs for facts that are not true.

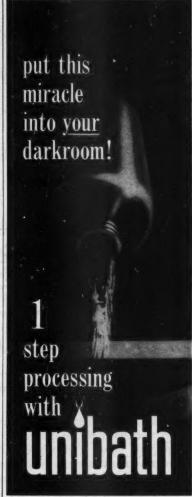
"A clean black" doesn't exist

We hear many loose expressions in color photography. People speak, for example, of "a nice bright black" or "a good clean black." How can a black be bright? It can be glossy, but not bright. Nor can a black be clean, because this word means (when applied to color) that the color contains a minimum of black.

When photographers talk about accurate color reproduction, they often use the word to mean exact without knowing how seldom this is possible.

Consider flesh color, for example. First of all, it varies all over the lot. Secondly, we often do not prefer a

(Continued on page 24)



Now—get all the thrills of home developing without any of the headaches. It's quick, simple and foolproof with UNIBATH, one-step developing and fixing. 6 minute developing. 5 minute washing. No critical time or temperature controls. UNIBATH develops all images to the full extent of the exposure—then stops automatically. It's fun all the way. The experts are using UNIBATH. Try it!

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WHAT'S AHEAD?

(Continued from page 22)

perfect reproduction of actual flesh color. Painters famous for their portraits represented flesh as they thought it should be, not as it actually appeared to them.

There are many other examples. Red hair is rarely red, and seldom even a shade of red. Yet we want it decidedly red in pictures if the subject is considered red-headed. Moonlight is shown on a stage as bluish, when actually it is white. It is nothing more than sunlight reflected from the moon.

Why the moon looks blue

Moonlight is regarded as bluish simply because moonlit scenes are so frequently observed through windows in rooms illuminated by yellowish light. When our eyes are adapted to yellowish light they automatically become more responsive to blue light. Similarly, a color film exposed in daylight to reproduce neutrals (grays) perfectly will, when viewed under tungsten illumination, show the neutrals as bluish.

Most people think the neutrals will appear yellowish because the film is being viewed under a yellowish source. The neutrals would be seen as yellowish only if our eyes were adapted to light of daylight quality.

The chromatic adaptive property of our visual system is a blessing for vision under natural circumstances, not a defect! A white tablecloth in a room illuminated by tungsten lamps appears white. It would be quite disturbing if it appeared yellow. Our visual system adjusts itself so that objects tend to be seen about the same even though the illumination varies considerably. In these circumstances, exact color reproduction would appear as a defect!

Our eyes accept black and white

In any case, if exactness were so important, why is it that no one finds a black-and-white reproduction of a subject objectionable—assuming it is of good general quality—on the basis of accuracy of reproduction?

'The black-and-write photographic portraits of Yousuf Karsh, for example, are sometimes considered works of art. However, if you ever saw a person on the street with the gray skin color of such photographs you would stop dead in your tracks. Such a ghostly figure would not induce you to say, "There's a person with flesh that matches Karsh's black-and-white portraits exactly."

Obviously people expect more accurate reproduction in color because of this medium's closer approach to realism. But in the final analysis it is usually not realism that one strives for in graphic reproduction i.e., realism in terms of physically measurable attributes. Rather, one attempts to communicate a realistic impression to observers.—THE END

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NEW products

Retina Reflex S-Complete Lenses



Kodak's Retina Reflex S combines exposure meter cross-coupled to

The shutter is a Synchro-Compur with speeds from 1 to 1/500 sec. plus B., MX sync., and V (self timer). The camera retains the Retina Reflex automatic diaphragm: lens is opened to fullest aperture when shutter is cocked.

matic diaphragm: lens is opened to fullest aperture when shutter is cocked, closes to predetermined diaphragm stop when shutter is released. To operate built-in exposure meter you rotate a knurled knob on camera base to align a "follower pointer" with meter needle and thereby set lens diaphragm. You may also set diaphragm and shutter manually. Each accessory lens is complete, and features an automatic depth of field indicator. Lenses are fitted with a one-turn bayonet mount.

Other features are single-stroke lever which advances film, cocks shutter, sets exposure counter; double exposure prevention which user can bypass; hinged back with snap lock. Other lenses available are six-element Retina Curtagon 28mm f/4 with built-in lens hood—price \$86.50; seven-element Retina Curtagon 35mm f/2.8—price \$74.50; five-element Retina Tele-Arton 85mm f/4—price \$87.50. Price of the Kodak Retina Reflex \$ with Xenar f/2.8 lens, \$199.50; with Xenon f/1.9 lens, \$235. Write: EASTMAN KODAK COMPANY, ROCHESTER 4. N.Y.

Century Has Coupled Meter



A built-in and coupled exposure meter is featured on the Century 35NE 35mm camera with 6-element 45mm f/2 Prominar lens. The Copal SLK shutter has speeds from 1 to 1/500 sec., B., self timer, and MX sync. Exposure is set by aligning the indicators in the window on top of the camera. The single window rangefinder-viewfinder has a bright line frameline with automatic parallax compensation. The 35NE also has a single-stroke film advance lever, hinged back, and frame counter with automatic zero reset. Price of the Century 35NE, \$114.50. Write: GRAFLEX, INC.

3750 MONROE AVE., ROCHESTER 3, N. Y.

Pentax Is Light Reflex

The Heiland Pentax H2, with standard 55mm 1/2 Auto-Takumar lens, is said to be the lightest available 35mm single-lens reflex. The Pentax H2 weighs 1 lb., 11 oz. The lens has an automatic diaphragm and is equipped with thread-mount lenses similar to the Pentacon, Praktina and others. Lenses available for the Pentax range from a (Continued on page 30)

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Adox film automatically improves negative quality—and sharpness of your lens

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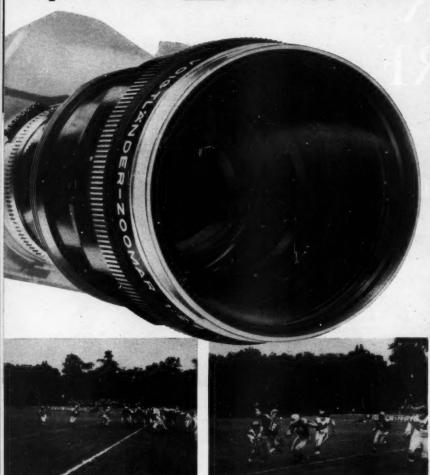
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NEW PRODUCTS

(Continued from page 28)

35mm f/2 wide angle to a 1000mm f/8 telephoto. Features of the H2 are: instant return mirror, focal-plane shutter with speeds from 1 to 1/500 sec. (single dial for all speeds), plus B and time, pentaprism finder with Fresnel lens, single-stroke film advance lever, window indicating when shutter is cocked, and FP and X sync. Price of the Pentax H2 with standard 55mm lens, \$179.50. Write: HEILAND DIVISION MIN NEAPOLIS-HONEYWELL REGULATOR CO. MIN NEAPOLIS-HONEY WELL REGULATOR CO. 5200 E. EVANS AVE., DENVER, COLORADO

Electrically Driven Graphic 35



An electric motor operates the Graphic 35 Electric camera, advances the film, cocks the shutter, and provides power for single-frame or sequence exposures.

power the motor. Tests are reported to have indicated that one set of batteries provides 1000 exposures. Nickel nave indicated that one set of batteries provides 1000 exposures. Nickel cadmium batteries may also be used for longer life. The motor switches off automatically after each exposure and batteries may be changed with film in the camera. The camera accepts interchangeable bayonet-mount lenses and you have a choice of 50mm normal lenses when the camera is purchased—the 6.61mm f (14 Tices Outpon or the the 6-element f/1.9 Iloca Quinon or the 4-element f/2.8 Rodenstock Ysarex. A coupled meter provides exposure con-trol semi-automatically. Other features include Synchro-Compur shutter with speeds from 1 to 1/500 sec., and B, MX sync., and self timer, coupled range-finder-viewfinder with automatic paralfinder-viewinder with automatic paral-lax compensating framelines for normal and telephoto lenses, automatic depth of field indicators on lens barrel. Price, with 50mm f/2.8 lens, \$237.50; with f/1.9 lens, \$275. Write: GRAFLEX, INC., DEFT. 111 3750 MONROE AVE., ROCHESTER, N. Y.

Ricoh 500 with Improved Finder



A redesigned three-window three-window rangefinder-view-finder with auto-matic parallax compensating frameline is fea-tured in the latest version of the Ricoh 500 35mm ment 45mm f/2.8

The 5-element camera. camera. The 5-element 45mm f/2.8 Riken Ricomat lens has duo-lever focusing which permits focusing with either hand. The redesigned Seikosha SLV shutter has speeds from 1 to 1/500 sec., B, MX sync., self timer, and cross-coupled LVS. The camera also features single-stroke trigger advance, automa-tic zero reset frame counter, rapid rewind crank with rotating tip, accessory clip cordless flash contact, and remov-able back. The 500 sells for \$59.95. Write: RICOH CAMERA 521 FIFTH AVE., NEW YORK, N. Y.

An Automatic Agfa



The Agfa Optima 35mm camera with Apotar 39mm f/3.9 lens, automatically adjusts both the diameters and the

phragm and the shutter speed according to lighting conditions. The diaphragm of the lens ranges from f/3.9 to f/22 and the shutter (Continued on page 32)

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NEW PRODUCTS

(Continued from page 30)

from 1/30 to 1/250 sec. With the lens wide open the shutter speed is automatically set between 1/30 and 1/250 sec. by the built-in exposure meter. If there is too much light when the camera is at 1/3.9 at 1/250 sec., the lens is automatically closed down to the correct f-number for adequate exposure. Other features include a signal in the frame of the viewfinder which warns of insufficient light for adequate exposure, zone focusing with three clickstops, and sync. flash at 1/30 sec. (lens must be set manually). Price of the Optima, \$79.95, plus \$10 for the ever-ready case. Write: Write

AGFA, INC. 516 W. 34 ST., NEW YORK 1, N. Y.

Konica S Has Coupled Meter



Hexar 50mm f/2.8 lens and coupled exposure meter are features of the Konica S 35mm camera. Lining up a needle with an index marker readies the camera for ex-

marker readies the camera for exposure. The camera los has a superimposed rangefinder, Copal-SV shutter, speeds from 1 to 1/500 sec., and B, MX sync., and self timer. The PC synchronization cord is located on the front of the Konica. Other features include a single-stroke rapid film advance lever that also cocks the shutter, automatic reset frame the shutter, automatic reset frame counter, and folding film rewind crank. A fully hinged back permits easy film access. Price of the Konica S, \$89.95. Write:

KONICA CAMERA CO. 76 W. CHELTEN AVE., PHILADELPHIA, PA.

Elgeet 8mm Movie Zoom Lens



The Elgeet 8mm zoom lens offers a range of focal lengths from 8.5mm to 25mm, and maximum aperture of f/2.5. A self-adjusting tubular coupled zoom finder automatically adjusts for

parallax from 3½ ft. to infinity. The Elgeet zoom lens will fit any 8mm camera with a D-mount. Finish is in black with satin chrome trim. The lens weighs 19 oz. Price of the Elgeet zoom, \$119.75. Write:

ELGEET OPTICAL CO., INC. 838 SMITH ST., ROCHESTER, N. Y.

Telephoto Lens for Exakta 35mm

The Auto-Spiratone 135mm f/2.8 telephoto lens is designed for Exakta 35mm cameras. The lens has a fully automatic diaphragm which couples to the Exakta's body release. Diaphragm blades close for actual exposure and open immediately after exposure. Other features include clickstops which permit intermediate settings and engraved depth of field scale. Price of the Auto-Spiratone 135mm lens, \$79.95. Write: SPIRATONE, INC. 135-06 NORTHERN BLVD., FLUSHING, N. Y. 135-06 NORTHERN BLVD., FLUSHING, N. Y.

Automatic Diaphragm on Exa

The 35mm single-lens reflex Exa is equipped with a 4-element 50mm f/2.8 Zeiss Tessar lens with automatic diaphragm. The lens focuses down to 1.65 ft. The camera accepts most lenses with the Exakta interchangeable mount to 105mm as well as many Exakta accessories. All Exakta viewfinders fit the Exa. The waist-level hooded finder

converts to an eye-level sportsfinder. The camera also has MX sync., and exposure counter. Price of the Exa, \$119.50. Write:

EXAKTA CAMERA CO. 705 BRONX RIVER ROAD, BRONXVILLE, N. Y.

Walz AG Adapter

Walz announced a 2-in. diam. reflector adapter for the new ultraminiature flashbulbs. It fits into the bulb socket of flashguns that use No. 5 or No. 25 bulbs, and has its own bulb ejector. The price, \$1.49. Write: U. S. PHOTO SUPPLY CO. 6478 SLIGO MILL RD., WASHINGTON, D. C.

Pneumatic Design Tripod



The Safe-Lock PT pneumatic tri-pod offers double extension legs which extend and lock with large knurled locking collars. The col-lars close a nylon compression ring for a 360° grip on the leg extensions.

the leg extensions. A pneumatic air cushion prevents accidental leg collapse. The panhead, mounted on a telescoping center column, adjusts for panning, tilting, left or right swing, or raising or lowering the camera. There are no gears or cranks. Finish is in anodized gold and blue. Maximum height of the tripod is 5 ft. 10 in., and weight is 6 lb. Price of the Safe-Lock Model PT tripod, \$38.75. Write:
SAFE-LOCK, INC.
870 w. 25 ST., HIALEAH, FLA.

Correction: In the December, 1959 issue of MODERN, the Minolta 16 ultraminiature camera was unfortunately omitted from the New Camera Buying Guide. Its features are: 16mm unperf. film, 10 x 14mm, 20 exp. p/roll; lens—25mm f/3.5; shutter— 1/25-1/200, X sync; push-pull body cover film advance, shutter wind; price, with case and two close-up lenses, \$39.95.

Graflex Title Slide

Now you can spice up your slide shows with a message or title to meet any occasion. This title slide fits any 35mm projector and the message can be changed over and over. The message or drawing is written or the rough side or drawing is written on the rough side of the slide with pencil, ink, crayon, or water color. The slide can be cleaned with a soft eraser or damp cloth. Four Title Slides cost \$.79 and a box of 25 costs \$3.75. Write: GRAFLEX, INC. ROCHESTER, NEW YORK

Kodak High Speed Movie Film

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(Continued on page 40)

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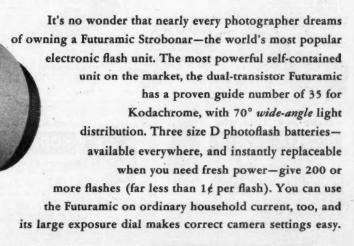
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modern COLOR

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Chas in flashbulbs! Which film goes with what bulbs-or is it the other way around?



What with daylight film, tungsten film, Type A, Type B, Type F film (even Type L film!) it's no wonder that the poor color photographer is in a near hopeless muddle trying to thread

his way through the maze of flashbulbs. Which bulb will produce the right color rendition-B type bulbs, clear bulbs dyed blue, clear bulbs with a plastic flash cover, bulbs with a filter, or flashbulbs dyed red?

Actually there are two basic approaches to the problem. Either we must fit the flashbulb to whatever film you're using or we must ditch what you're using and simply discuss the best possible film and flash combinations and advise you to use them. Next month we'll talk of the ideal. Right now, let's attack the first part of the problem and give you the right bulb to use with whatever film you're using.

If, your camera is loaded with Daylight Type film of any kind it's simple -use blue-tinted flashbulbs. These carry the suffix 'B' after their number, as for example 5B, 25B etc. Blue flashbulbs cost slightly more than clear wire-filled ones. You can save your pennies by slipping an 80C filter over the camera lens, and using clear bulbs. Exposure then will be the same as though you were using a blue bulb of the same number.

Another economy: you can dip clear flashbulbs into an inexpensive flashbulb dye such as Jen-Dip Blue Label, Mansfield Blue Coat, or Thoro Blu-Kote. This has a special advantage. You can get warmer or cooler effects by varying the amount of time you leave the bulb in the dye. Full data on this, and on exposure with dipped bulbs, may be obtained by writing Jen Products, Inc., 419 W. 42nd St., New York 36, N. Y.; Mansfield Industries, Inc., 1227 W. Loyola Ave., Chicago 26, Ill.; and Thoro Products Co., P. O. Box 567, Reseda, Calif.

Here's a third approach: use clear bulbs and a blue plastic shield. These shields vary somewhat in density. I'd check with the maker for exposure instructions. Generally, however, the exposure is similar to that for a common garden variety blue flashbulb. According to my experiences with blue flashshields, results are a bit on the warmish side, but quite suitable for fill-in flash.

Blue flashbulbs are used extensively for outdoor fill-in flash with daylight films. A combination which you should not use in outdoor fill-in work: daylight film, an 80C filter on the lens and a clear flashbulb. While the filter will correct the light from the bulb it will produce too blue a scene.

For all other color films, including Type F, Type A, Tungsten Type, and negative color films such as Kodacolor. Ektacolor S, Agfacolor CN17 and CN14, use clear flashbulbs. (Flashbulbs must not be used with Ektacolor Type L. This film is designed to give good color rendition for exposures ranging from 1/5 to 60 sec.)

No filter is required if you use clear flashbulbs with Kodachrome or Ektachrome Type F and with negative

color.

When shooting Kodachrome Pro-fessional Type A, High Speed Ektachrome Type B, Ektachrome Type B sheet film or 35mm Anscochrome Tungsten Type 532, you'll need an 81C filter to prevent bluish results.

For Super Anscochrome, Tungsten Type, and Anscochrome, Tungsten Type sheet film the slightly deeper 81D filter is recommended.

When to use amber bulbs

If you want to shoot Type A, type B, or Tungsten Type films without a filter you may do so if you use Solar 5A and 25C or Dura 5A and 6A ambertinted flashbulbs. Contact Solar Electric Corps, 535 Fifth Ave., New York 17. N. Y. and Dura Electric Lamp Co., Inc., 62-64 E. Bigelow St., Newark 8, N. J. for data sheets on these lamps.

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You can also avoid using a filter with Type A, B, or Tungsten films by treating clear flashbulbs with Jen-Dip Red Label. Here too, just as with blue dyes, the amount of warmth you get in the finished picture can be controlled by varying the dipping time.

So far I've mentioned only wirefilled flashbulbs. But what about gasfilled lamps such as SM and SF?

Unfortunately the overall characteristics of these lamps makes them generally unsuited for color work. However, they may be used with Professional Kodachrome Type A without a filter with excellent results. The short duration of these lamps, about 1/180 sec., helps stop motion, an advantage if your shutter is synchronized only for the slower speeds.-THE END

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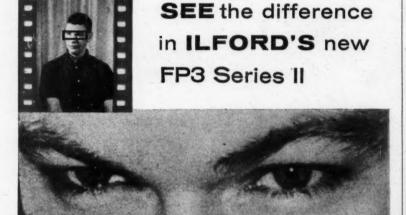
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NEW PRODUCTS

(Continued from page 32)

type 7255. Supplies of the new film are expected to be limited until early next year. The films will be supplied by regular Kodak dealers under the names Kodak Color Reversal film, Daylight type SO-260 and SO-270. Price of the film, \$13.95 per 100-ft. spool. It will not be available in magazines. Write: EASTMAN KODAK 343 STATE STREET, ROCHESTER, N. Y.

Crestline Slide Projector



The Crestline 500 2 x 2 slide 500 2 x projector with 500-watt lamp 4-in. f/3.5 and 4-in. f/3.5 projection dens is another flat silhouette slide projector. The tray holds 36

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The lucky winning pictures in the Polaroid Land contest.

Mansfield 8mm Editor



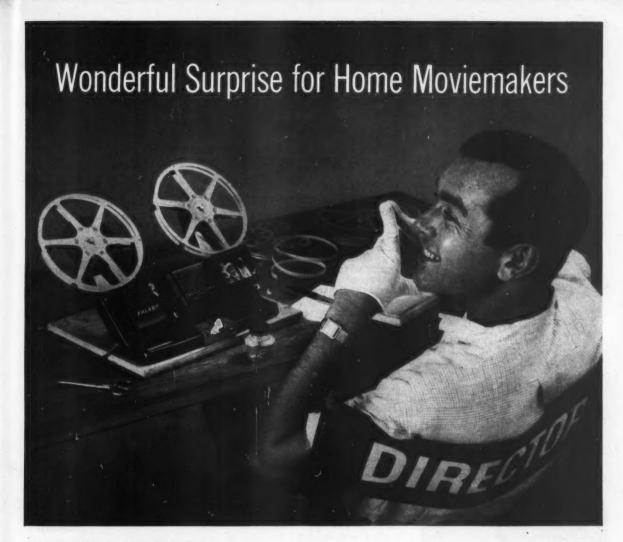
The Mansfield Reporter 8mm editor has a 21/4 x 31/4 viewing screen and comes com-plete with the Mansfield "Dri-Mansfield "Dri-Splice" splicer and splicing tape. Con-

structed of die-cast aluminum, mod-ern in design, the Reporter has a 400-ft capacity, fold-away rewinds, pre-cision ground, polished and coated lenses, and Marex film system. Price of the Mansfield Reporter 8mm editor, complete with splicer, \$34.95. Write: MANSFIELD INDUSTRIES, INC. CHICAGO 26, ILL.

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Makes splices with tape or film cement

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THE WELL TRAVELED CAMERA

The great puzzle problem: How do you carry your camera equipment when you hit the road?

At the first whiff of the word travel or vacation, the camera owner's thoughts turn to his equipment and what he will take with him-be it a trip to the Sahara or the beach three miles away. He or she will lay out everything necessary plus a number of things which are not and wonder: "how the devil am I going to pack all this stuff?"

At some time in the life of every photographic fan, he or she thinks of the ideal answer. A huge gadget bag of beautiful leather quite capable of holding everything-with room for a few items yet unbought. It's a great idea until you try to lift the full bag from the ground. No funnier sight exists in a distant land than the American tourist gamely staggering under the weight of a giant camera case. And if you intend to take candids, the large case will announce your intentions louder than a fire siren. "Here comes the American and his camera case," or, if the case be of sufficient size, "here comes the case and its American."

What to do about it? Well, you can leave the big case at the hotel and go off with camera in hand plus a meter stuck in one pocket, rolls of film in another. You'll look sorta lumpy. And it's often rather difficult to extract that meter from your left rear pocket (if you're a man). Let's not mention the possibility of sitting on it by error. Well anyway, the big case by itself doesn't really work out too well in actual practice.



Complete interior usefulness: two 35s with lenses, plenty of film, meter plus 135mm lens all fit neatly.

In the course of two trips to Europe, ten days in the Caribbean and some fast weekends here and there. I think I now have the problem solved in a manner quite possible and practical for anvone.

Plan on taking your important cameras and equipment in one, small, compact case. I've found that cases similar to that shown in the illustrations, hold an unbelievable amount in



Ever try to open a zipper quickly? Single snap lock takes split second. Turn camera case so it opens inwards.

a tiny, highly portable space. In the case seen, which is only 91/2 x41/4 x5% in., I can carry one large 35mm camera with a 50mm lens, another with a 35mm lens, my exposure meter, a 135 or 105mm lens, plenty of film (6-8 rolls) a lens brush and lens tissue. I don't believe in carrying the cameras in ever-ready cases. Instead, I suggest a neck strap on the camera itself. Ever-ready cases are clumsy. By the time you whip a camera out of one to take a picture, the subject has often

On the subject of small cases, I am against the zipper case and very much for the single snap top case (see photo above). Zippers are a trial, no matter where placed. I always seem to get an exposure meter cord or something else caught in them, thereby jamming the case neither open nor closed. With the snap top case, I can turn the opening edge towards me and reach in for

(Continued on page 48)

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35MM

by JOHN WOLBARST

Ethol Concentrate Type T: A novel developer puts film fog to work for super speeds.

For as long as the memory of the oldest inhabitant, photographers have tried to produce negatives which show a minimum of fog in the thin or clear areas. The cleaner and more transparent the base of the developed film, the more successful the result and the better the technique displayed. At least, according to that point of view.

Contrariwise, there has also been a small group of technicians who feel that a moderate level of fog could be helpful in reducing excessive contrasts within the negative image, thus

making it easier to print.

Ethol Concentrate Type T is a new developer which puts this fogging principle to work with a vengeance. Type T is marketed by Plymouth Products Co., Inc., 1770 W. Berteau Ave., Chicago, manufacturers of UFG developer. Type T is a liquid, which is diluted 1:7 for one-time use. A 4-oz. bottle costs 75 cents.

It is by no means an all-purpose developer. Rather, its only real justification for existence is that under proper conditions of use it is capable of producing very high effective film speeds. Notice that I emphasized effective.

Want 10X the E. I.?

There's nothing secret about the fact that given a fairly low contrast scene, with fairly even lighting, it's possible to produce film speeds nearly 10X the normal exposure index with moderate overdevelopment in Kodak D-76. However, films containing scenes of normal or excessive contrast, or in which the lighting is contrasty, cannot be developed so as to give 10X "normal" speed without resulting in contrasts so excessive as to make the negatives virtually unprintable. And the cleaner and more fog-free the negatives, the greater the contrast.

It's exactly this problem which Type T developer is designed to alleviate. It is an extremely powerful formula which produces maximum film speed. At the same time it causes a considerable fog over the entire negative.

In the dense areas of the negative the fog has little effect—the images are already so dense that the fog represents only a small additional density, proportionately. However, in the thin or clear areas, the density caused by the fog alone may be 10X (or more) that of the density of the silver image. The result is that the difference in density between the thin areas and the dense areas is reduced markedly. Thus, the contrast of the negative is reduced. Because the contrast is reduced so greatly we now have a negative resembling one of a low contrast scene which has been lighted fairly evenly and developed vigorously to produce maximum speed.

Type T is designed to be used at 75F. Constant, slow, gentle agitation is necessary to avoid bad streaking. Recommended development times are: Kodak Plus-X Pan, 3-6 minutes; Kodak Tri-X Pan, 5-10 minutes; Ansco Super Hypan, 4½-10 minutes. Which time you use depends on the exposure. This is explained in some detail in the instruction sheet with the developer, so I won't go into it here.

But does it work?

I found that, within certain limits, Ethol Type T functioned with remarkable success. It worked best with Kodak Tri-X Pan and Plus-X Pan. With Ansco Super Hypan the results appeared to be somewhat less predictable. The developer seems to be incompatible with Agfa Isopan Record and other fast foreign-made films.

Careful sensitometric tests showed that recommended developments of Kodak Tri-X Pan in Type T produced negatives of almost exactly the same contrast characteristics as the recommended development in Kodak D-76. This was quite a surprise to me, for Type T is a more vigorous developer than Kodak D-76.

Practical tests confirmed the sensitometric tests results and showed that Type T could deliver noticeably more effective film speed than was possible with D-76, simply because it was possible to print the negatives more successfully.

Type T was at its best with badly underexposed, high contrast scenes. I won't say that the results then were beautiful, but they were usable.

Where the underexposure and contrast were less drastic, Type T produced negatives of good quality, which enlarged easily to 13X. Graininess appeared to be slightly higher than that shown by negatives developed in D-76. The range of tones and sharpness were satisfactory.

Caution: Don't use Type T where overexposure is possible. The results are almost unprintably dense, graininess looks like gravel, etc. But used properly, Type T may save many a picture for you.—THE END

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WELL TRAVELED CAMERA

(Continued from page 42)

a piece of equipment in hot sun, rain or snow without letting the equipment inside suffer.

The new snap cases with interchangeable compartments, which you can change to suit your own needs, seemed like an excellent idea and have proved so, for me, anyhow.

Of course, this rather small case will probably not hold all you possess or even all you wish to take on your trip. Pack the rest of the film, extra lenses and what have you in with your regular luggage. Keep your working bag small and neat.

For the air traveler who will probably object to packing anything in his luggage which might send him closer to that 44-pound baggage limitation,



It looks crazy, but this is how I pack my case into a big one so I can fly with the greatest possible amount of equipment on my baggage allowance.

I have a solution. It may sound really mad, but it works. I take my small case and place it inside a larger expandable plastic gadget bag. The reason: when you travel by air, the airlines seldom weigh your camera case unless you ask them to. Ergo, I load the big bag with my small camera case plus all the small objects-electric razors-etc., which are heavy and might send me over the 44-pound limit. When I arrive at my destination, I use the small bag for camera equipment while the large one remains in the hotel room collecting all the souvenirs I might pick up. Before leaving again for home, I can mail the souvenirs, put the small case within the large one and go home. It's wild but it works .- H. K.

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BEHIND the SCENES

Canon's zoom lens—Self-lighting artificial satellites—Versatile tape recorder from Japan.

Not to be outdone by Voigtlander and Nikon, Canon now has a zoom lens for eye-level reflex cameras—notably its own Canonflex. The Canon zoom originally was designed for TV work. As you can see from the accom-



Anyone for zooms from 45 to 200mm at f/2.8? Canon's got the answer.

panying photograph, it will not take the honors as the smallest zoom lens yet designed. However, it is an f/2.8 lens and it does zoom from 45 to 200mm!

Inside, there are thirteen elements in ten groups. The lens will focus as close as 6 ft. It weighs 8.8 pounds.

Here's how the zoom mechanism works: There's a push button type zoom focusing dial on the rear of the lens barrel. Turn the dial and you focus the lens. Push the dial inwards and it zooms. Corner to corner sharpness, high contrast, and absence of aberrations are claimed. The lens is available only in a non-preset mount for the Canonflex. Price? Availability? Nobody this side or that side of the Pacific knows.

Satellites to light the sky

As any astronomical photographer can tell you, photographing one of the fast-moving man-made satellites is quite a job. To make it easier, come spring 1961, a satellite incorporating a high intensity flashing light system designed by Edgerton, Germehausen & Grier, Inc. will change the situation markedly.

By employing a system of flashing lights, the satellite will be photographed during its passage on the dark side of the earth. Present satellites can only be photographed during a limited twilight period when the sun has just set but they still reflect its rays.

The multiple lights on the satellite's surface, it's reported, will be triggered to flash simultaneously when the satellite is over any land mass. The flash unit will produce about 800 wattseconds of light, which, at a 1000-mile altitude over the earth, will give the satellite about the same brilliance as the faintest stars that are visible to the naked eye.

The flashing unit, it's planned, will be photographable with a lens of approximately 125mm. Present satellites can only be photographed with cameras having lenses of about 500mm.

The flash batteries will be charged by solar energy while the satellite is on the sunlit side of the globe. During the two-hour orbiting period, the controlled flashing will work for a little over half an hour. At this rate it's hoped the satellite will continue to flash for about a year.

New tape recorder combination

We were intrigued recently by a comparatively small tape recorder, amplifier, telephone recorder, FM radio, 33 1/3 RPM phonograph combination being made in Japan (not available here). One of the advertised uses of this seemed particularly ingenious. The manufacturer suggested that much money could be saved on transatlantic telephone calls by using his machines.

Record your voice at a slow speed— 3% inches per sec. Then play it through the transatlantic telephone



It might be cheaper to talk faster and forget all about the machine.

at twice the speed, 7½ inches per sec. The party at the other end of the phone would record the message with a separate unit at 7½ inches per sec. and then relay it back to hear the message at 3¼ inches per sec. Thus you get ten minutes of talk into a five-minute period. Efficient certainly, but it allows no room for back talk.—H. K.

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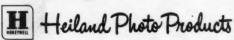
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ULTRA

by JOSEPH D. COOPER

With flash you can take pictures anywhere at any time. Here's how to use it with your ultraminiature.



A pocketful of tiny flashbulbs, a pocket-sized reflector, yourultraminiature camera in one of your other pockets, and you will be equipped for just about any picture-taking situation possible.

There are some flash problems which call for picture-taking procedures that you don't ordinarily have with 35mm and larger cameras. The most important difference between ultraminiature and most other cameras is that all of the present ultraminiatures are synchronized only for "zero delay," also called X-synchronization. This means that the bulb must be fired with the shutter set at about 1/20 or 1/25 sec. in order for the flash to occur while the shutter is open.

While you can use any flashbulb in the bayonet-base size (and smaller with suitable adapters or flash reflectors), I believe you will have best control if you use the SF or SM flashbulbs. These go off with a high peak that lasts from 1/100 to 1/200 sec. Therefore, even when you use them at the slow shutter speed of 1/20 or 1/25, you are able to stop most action and you also minimize any blurring due to camera movement. Those bulbs can be used with most flash units except for the Minox flash, which will be discussed separately below.

Exposure with these bulbs is approximately the same, but you should check the back of the flashbulb carton for the guide number to use with the particular film in your camera. These bulbs are not made in blue, so if you intend using them with daylight color films, get yourself some Jen-Dip with which to coat the surface of the bulb or else get a blue flash shield.

One problem you'll have is that the slow shutter speed makes it impractical to use flash to fill in shadows in the bright sun. If the shadow portions were properly exposed, the sunlit areas would be horribly overexposed. If you are using an electronic flash unit with your ultraminiature camera you will not have this problem, because you can then use the faster shutter speeds.

A second problem is that several of the ultraminiature cameras do not have sufficiently small apertures to permit you to use flash close to the subject. This is true of the Minicord, Mamiya-16, both Super and Automatic, the Minolta-16, and the Minox. All except the Minox have f/11 as the smallest opening while the Minox has a simplified system with a constant aperture of f/3.5. Thus, at f/11, if you use a film and flashbulb combination with an exposure guide number of 100, you could not get any closer, under standard procedures, than about 9 ft. without risking overexposure.

How to cut down the light

The simplest solution is to use a handkerchief over the flashgun and one of the slower films in the camera. single thickness of handkerchief in front of the flash reflector is the equivalent of one lens opening or f/stop. Thus, if the proper exposure calls for f/16 and you do not have this opening, the single thickness of handkerchief will cut the illumination down sufficiently to permit you to use f/11. A second thickness of handkerchief is worth one additional lens stop. If you have a fan reflector you can reduce the illumination from one half to one stop more by flattening it out.

With the Minox, a fan reflector, E. I. 25 film, and an M-2 bulb, the correct distance is 15 ft. With a thickness of handkerchief it is 10 ft.; with two thicknesses, 7 ft.

With Minox B camera, using ASA 25 black-and-white film, you can take fill-in flash pictures outdoors with the neutral density filter. With an average sunlit exposure of 1/200 sec., the 10X factor of this filter reduces the exposure to 1/20 sec. At this speed it can use M-2 flashbulbs at a working distance of about 5 ft., which would give you a fairly good portrait.

If you want to get more interesting effects, and escape from the flat lighting of the flash unit attached to the camera, buy a flash connecting cord extension from your photo dealer. This will enable you to hold the flash unit away from the camera, say rather high and to the side for three-quarter lighting, when taking portraits. You can get special plugs which permit you to hook up more than one flash unit at a time for even more interesting effects. Remember that when you use flash off the camera, the distance should be computed from the flash unit itself rather than from the camera.-THE END

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Once-In-A-Lifetime Offer To Owners Of Leica, Canon And Other 35's With Screw-Thread Lens Mounts

With the demand for the new Nikon F Automatic Reflex assuming gigantic proportions, and with the steadily growing popularity of the rangefinder-coupled SP and S3, the manufacturer has found it necessary to devote more of its facilities to camera production, and to the production of Nikkor lenses designed for these cameras.

Nikon is therefore discontinuing the manufacture of screw-mount Nikkor lenses for Leica, Canon and similar 35mm cameras, and is closing out its entire remaining inventory at drastically reduced prices, representing 50% off list.

	SALE PRICES
\$172.50 w/finder	\$86.25 w/finder
153.00	76.50
93.00	46.50
143.00	71.50
183.50	91.75
109.50	54.75
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315.00	157.50
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159.00	79.50
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All lenses, except 50mm, supplied with leather cases. *Also available in Contax mounts.

NOTE: This sale does not apply to regular Nikkor Lenses designed for use with Nikon Cameras.

The supply of these lenses is limited—so see your Nikon Dealer today!

NIKON INCORPORATED . 111 Fifth Avenue . New York 3, N. Y. DEPT MP.1

NEW PRODUCTS

(Continued from page 40)

Gaffer-Tape, \$6.95. A five-unit kit sells for \$29.95, and 15 yards of tape, \$1.95. Write:

LOWEL-LIGHT PHOTO ENGINEERING

Nega-Files For 35mm Filing



Two more Nega-Files for 35mm have been added to the list. The new units are designed to hold 300 strips of four frames each. The boxes are made of well-seasoned

well-seasoned hardwood in natural finish. Each file is equipped with a brass-plated catch and hinges. Nega-File No. 35-G-4-300 has 300 glassine thumb cut envelopes, three indexes and visible numerical guides printed. and visible numerical guides printed from 10 to 300. Price, \$9.55. Nega-File No. 35-A-4-300 is furnished with 300 acetate sleeves, each with a strip for notes. There are also three index cards and numerical guides. Price, \$15.25. and ni Write:

THE NEGA-FILE CO. BOX 405, DOYLESTOWN, PA.

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MODERN's giant 35mm issue.

Graflash Miniature Flashaun



The Graflash M Fan-Fold flash unit is smaller than a pack of cigarettes and is for use with M5, M2, and M25 flashbulbs. The 3-in. diam. elliptical-type reflector has eight folding blades. A pebbled surface on the reflector is designed to give soft, uniform light even at close range. Other The Graflash M

form light even at close range. Other features include built-in lamp tester, push button bulb ejector, BC circuit, camera accessory foot, and detachable flash cord. Power is supplied by an Eveready 505 battery or equivalent. Price of the Grafiash, \$4.95. Write: GRAFLEX, INC., DEPT. 115
3750 MONROE AVE., ROCHESTER, N. Y.

Kodak Flash for AG-1 Lamps



Kodak's Supermite Flasholder mite Flasholder is small enough to fit in your hand and is used with the minute, all glass AG-1 lamps. The 2-in. Lumaclad reflector is appropriate to supply reported to supply as much illumina-tion as an M2

as much illumination as an M2 lamp in a "typical" 3-in. flash reflector. The flash-gun fits all Kodak cameras equipped with Kodalite fittings, and all other cameras with similar direct fittings for flash. The gun may be used with the Kodak Universal Flasholder bracket for all other cameras with ASA or Continental flash concrete for all other cameras with ASA or Continental flash concrete for all other cameras with ASA or Continental flash coneras with ASA or Continental flash con-nections. The unit has a flash exposure

(Continued on page 58)

FOR RUSH ORDERS, CALL NEW YORK CITY - CYpress 9-6400 The second second THE FAMOUS BIG ONE NOW BETTER THAN EVER BUDGET PLAN AVAILABLE CENSORED! PRAKTICA FX-2 12.8 ISCO WESTAR CLICK-STOPS 35mm
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WITH COATED \$2 LENS
COUPLED RANGEFINDER ATEST PRICE BRAND 5495 POWER HANDLE Interchangeable lens. Shutter ½ to 1/500. SYNCHRO! De Luxe Case 7.95. (Sold only with LOOK THRU THE VIEWFINDER AND YOU'LL KNOW BRAND NEW Sterling-Howard's done it soain.

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NEW PRODUCTS

(Continued from page 56)

guide and is powered by two Penlite batteries or the Midget BC flashpack and 15-volt battery. Price, \$3.95. Write: EASTMAN KODAK 343 STATE STREET, ROCT ESTER, N. Y.

Yashica Fan-Fold BC Unit



The compact Yashica-Lite BC flashgun fits all standard accessory shoes and accepts most bayonet-type bulbs (adapter needed for M 2 bulbs). It has a 22½-volt battery, tester, ejectery, tester, ejector, exposure calculator, and cord with PC plug. The aluminum fan-fold blades open to 5 in. The unit

costs \$4.95. Write: YASHICA CAMERA CO. 234 FIFTH AVE., NEW YORK 1, N. Y.

Hershey Electronic Flash



Sun-Lite Hi-Pro Model M elec-tronic flash unit is reported to have a guide number of guide number of 90 for Koda-chrome. It weighs $4\frac{1}{2}$ lbs., and measures $6 \times 6 \times 6$ in. Other features are Other features are a built-in photo-cell for slave units, modeling light, and six-second re-cycling time. Ac-cessories available

include a swivel bracket, barn doors with 360° rotation; and a collapsible light stand. The price of the Model M, \$109.50. Write:

HERSHEY MANUFACTURING CO. 4309 W. LAKE ST., CHICAGO 24, ILL.

Automatic Emulsion Scraping



If cleaning emulsion off film for splicing is part of your editing problems, you may be interested in the 8 and 16mm hot

splicer marketed by Western Cine Service, Inc. After film is locked in the platens, a button is depressed to activate a motor driven rotary cutter that travels the full width of the film and removes emulsion to the proper depth. The manufacturer claims that the automatic feature makes it possible the automatic feature makes it possible to use the splicing machine in dark-rooms. Other features include adjustable splice width, dual film registration pins on the platens for splicing sound stock with perforations either away or toward the editor, and constant platen temperature of 99°F. The splicer sells for \$229.50. Write:

WESTERN CINE SERVICE, INC. 114 E. 8 ST., DENVER, COLORADO.

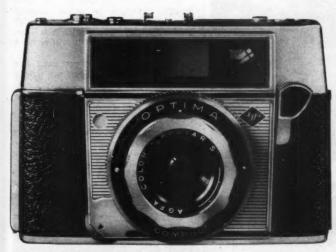
MODERN has received a new price for Miracote protective film coating listed in August "New Products." The price is \$1.98 for a 6-oz. jar.

Note: The term ONE SHOT, used by John Wolbarst in his 16-page section on films and developers, November 1959, is a trademark owned by the FR Corp. and not a generic term.

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With the OPTIMA, you're free to concentrate on the things you care about—composition, expressions, the effect of the lighting. You're free from mechanical chores and worries about technique. And the pictures you make will be top-notch—they'll bear the stamp of a precision-built, advanced camera.

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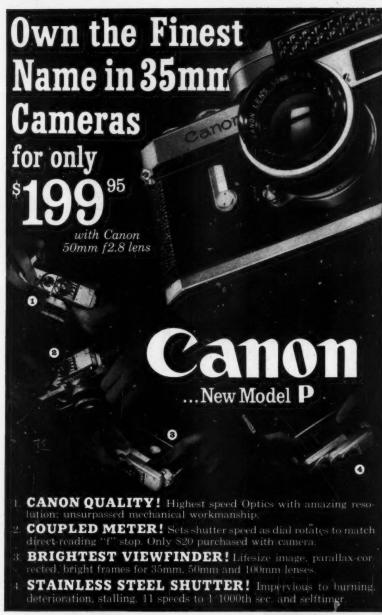
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the LARGE CAMERA

by ANDREAS FEININGER Staff Photographer for Life

If you want to add to your equipment at a modest expense, look for a serviceable old lens.



Why not treat yourself to another lens? I don't suggest buying a new lens, just the opposite. I advise buying an additional old lens.

Take advantage of the fact that large cameras can be fitted with any

type and kind of lens, regardless of the lens's focal length, aperture, lens mount or focusing arrangement. You don't believe you can use a two-inch Leica lens on a 4 x 5 camera? Even this outrageous combination can be useful for super close-ups.

A movie camera lens of 1-in. focal length, designed to cover nothing larger than a 16mm frame, could also come in handy. Use it with a bellows extension of 10 in. and it will cover a 4×5 negative.

But why an old lens, you ask? For two reasons: old lenses are cheap (they start at \$3), and they're available in many focal lengths.

What to look for

Large photo shops don't usually handle antique lenses. There is neither enough profit in selling them nor enough demand to stock them.

However, I bought my most valuable lens in such a large store. It was a 40-inch Dallmeyer Grandac variable focal length camera lens. The proprietor thought it was an old-fashioned projection lens because it consisted of two tubes connected by a rack-and-pinion drive. It was buried among inferior lenses and cost only a pittance.

Pawnshops and small camera stores are ideal places to look for old lenses, but be prepared to haggle with pawnshop operators. You should look for lenses that are unusually large or unusually small.

Look for a hand-engraved brass mount and Waterhouse stops. The latter are diaphragm apertures made as brass slides with punched holes. They fit into a slot in the lens barrel.

(Continued on page 62)



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300-mm., f/5.6 Tele-Kilar... \$197.50 : 400-mm., f/5.6 Fern-Kilar... \$249.50 : 400-mm., f/5.6 Fern-Kilar... \$599.50

ALSO AVAILABLE! 150-mm., f/3.5 Tele-Kilar (ideal for needlesherp pertraits) priced at \$164.50

Don't let distance from your subject stop you from shooting! Whether you are photographing the Empire State Building or a mountain from miles away, sports or other events from a grandstand, a subject across a park, a bird's nest from the ground or a parade over the heads of crowds, a Kilfitt Basic Kilar, like a telescope, will bring your subject closer to your camera without your moving a step... and give you utmost versatility and economy in the bargain. The Basic Kilar mount is ingeniously designed so it will fit virtually all your miniature and movie cameras*, even if they are different makes, by a simple change of adapters.

A Kilar will magnify the image of a distant subject to recognizable size with-

out sacrificing the slightest quality. The Kilfitt name on the lens is your assurance of finest resolution and manufacturing skill. The Kilars are lightweight, highly color corrected lenses unsurpassed for critical sharpness. Each long Kilar comes with a test plate plotographed with that lens — indisputable proof that you are getting finest quality!

*All long focal length Basic Kilars are designed specifically for 35-mm. (24 x 36-mm.) and smaller negative sizes but may be used with 2½ x 2½ cameras. Adapters are available for Alpa, Asahi Pentax, Consol, Contax-S, Contax-D, Edixa Reflex, Exakta, Hexacon, Miranda, Pontacon, Praktiflex, Retaflex; Canon, Contax, Leica, Nikon and Praktina, all cameras with Leica threading; Hasselblad; Arriflex, Cine Kodak Special and all C-mount movie cameras.

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☐ I inclose 10c to cover cost of mailing handsome, 2-color booklet on Kilfitt Basic Kilars, Makro-Kilars, Reflex Housings and Extension Tubes and Bellows.

THE LARGE CAMERA

(Continued from page 60)

Look for war surplus lenses. The massive ones that fit in aerial cameras are often extremely sharp, as are lenses that come from bomb sights and periscopes.

You may find old-fashioned telephoto lenses of variable focal length, similar to the Dallmeyer Grandac. You can recognize them by their rack-and-pinion drive for changing the spacing between the front and rear elements. Each of these lenses is equivalent to many telephoto lenses of different focal lengths rolled into one. Most are very sharp at the smaller lens openings.

Old-fashioned lenses of symmetrical construction may be recognized by their identical front and rear elements. Each of these elements used by itself has about twice the focal length of the complete system. With luck you may find such a lens for \$5. Despite its probable low speed it produces pictures as sharp as many modern \$300 telephoto lenses.

Special-purpose lenses

A prize catch is the Goerz Hypergon. This is the widest wide-angle lens of rectilinear correction ever made, and has a 130° angle of view. You can recognize it by the star-shaped little spinner mounted directly in front of the lens. The spinner is activated by a hand pump and serves to equalize exposure between the center and edges of the negative. Imagine, a Hypergon with a three-inch focal length that will cover an 8 x 10 negative!

Some old portrait lenses are excellent for soft-focus effects. Such a lens is the Rodenstock Imagon Tiefenbildner. You can recognize it by the sievelike, separate diaphragm discs which go in front of the lens to determine the amount of sharpness or diffusion in the image.

Convertible lens sets give you three to five different focal lengths. The most famous of these convertibles is the Meyer Satz Plasmat. Thirty years ago this was the most coveted of "pictorial" lenses on the market.

Here's a simple test to help you discover the focal length of long focus and normal lenses if it isn't inscribed on the lens housing. Hold a white sheet of paper in back of the lens. Move the lens back and forth until it produces a sharp image of an object at infinity (a distant building). The distance between the lens and paper is about the focal length of the lens.

The ultimate test of any lens is its performance in a camera. If possible, arrange for a three-day trial period with the seller before you clinch the deal. Remember that any lens mounted in a barrel (and most old lenses are) can easily be mounted in a modern shutter. An unsuitable lens mount is no cause for dismay, it is merely an obstacle to be overcome. This is the challenge, and the fun, of any treasure hunt.—THE END

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LESS THAN 2 x 2 SLIDE PROJECTORS 169.95 4 pounds! . 124.50 BRAND NEW SUPER BUYSI 75.50 EDITE: POLAROID CAMERAS LaBalle 396-W, Aut **Imported** TYPICAL VALUES! MARY MODI Plantel 89, 219, 2316, 1886. 75.00 24.39 75.00 24.39 75.00 34.39 75.00 34.39 75.00 14.56 75.00 14.57 15 69.95 \$ 28.85 . 80.75 31.86 ISISTOR Argus C-4, 12.8 Ctd, Coopied BF. Kedat Signet, 13.5, Cp64, Synch. Costex Illa, 12 Somen, Beter. Redak Bastom Special, 12 Costed. Redak 35 BF, 13.5 Costed Leso. Vegigtander Promissol, 12, Cp64, Vegigtander Promissol, 12, Cp64, Leica IMF, 12 Somenitar, Used. Leica IMF, 12 Somenitar, Used. Leica IMF, 12 Somenitar, Used. ELECTRONIC FLASH UNITS 8mm MOVIE CAMERAS Cig. HOW TYPICAL BRAND NEW SLASHESI 99.95 72.00 FE 140 AC Wat. Lightweight. 99.90 43.71 Warnhille Wi-2. AE & Bottery. 99.95 48.00 Warnhille Wi-2. AE & Bottery. 79.95 48.00 Manufaller No. AE Bottery. 182.90 78.95 Mapubrash Battary Unit. III Soids. Leica IMF. 12 Summittar. Word. Leica IM. 12 Summittar. Word. Leica IM. 12 Ctd. 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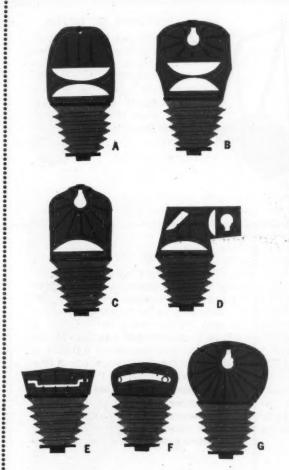
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HOW TO BUY AND TESTAN ENLARGER

Few photographers realize the importance of the enlarger in the production of excellent prints. They will discuss cameras, camera lenses, and developers with little thought to that instrument which will really determine whether the image on the paper looks like a smudged mistake or a brilliant creative picture. Contrary to the pap you may have been fed, there is far more to choosing an enlarger than determining the old question of which is better—condenser or diffuser. Accordingly, photographer and technician Edward Meyers here takes the enlarger in hand, as it were, and analyzes all the structural, optical, and mechanical features available on the market today, what each means and whether you need them. In the end, no picture on paper can be better than the man who makes it, the camera that takes it, and the enlarger which produces it. If you find that your old and seemingly faithful enlarger has been cheating you, now's the time to put a stop to it.

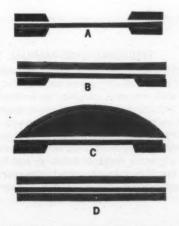


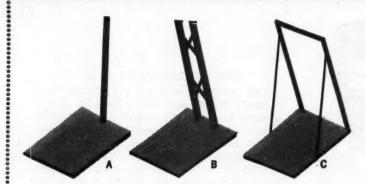
WHICH ILLUMINATION IS BEST?

True condenser enlarger (A) utilizes point source of light and two condensers. It produces prints with maximum sharpness and most graininess. If magnification is altered, lens and condensers must be refocused. Typical condenser enlarger (B) uses frosted bulb. Two condensers focus slightly diffused light through negative. Result is sharp but grainy image. Condensers should be changed or refocused when negative size and lens is changed. Single condenser enlarger (C) uses frosted bulb, produces sharp image with slightly muted grain. Single condenser is often part of negative carrier (see below). Double condenser reflex enlarger (D) produces same quality image as (B); however, by reflecting light to negative with mirror, lamp housing is made more compact. Diffusion enlargers-grid type cathode tube (E), circular fluorescent tube (F), and frosted incandescent bulb (G)—produce visually sharp images with minimum noticeable graininess. These enlargers can take almost any size negative and lens since light is completely diffused and is not focused at any one position as with condenser enlargers.

THE TRUTH ABOUT NEGATIVE CARRIERS

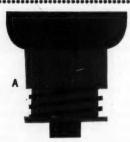
Glassless negative carrier (A) is best suited for negative sizes 2½ x 2½ and smaller. Although glassless carriers make cleaning glass plates unnecessary, larger negatives are apt to buckle from heat produced by the enlarger lamp or sag from their own weight. Compromise negative carriers—half glass, half metal (B)—and half glass condenser, half metal (C), hold negatives flatter. Double glass negative carrier (D) holds negatives completely flat regardless of size or heat. However, all four glass surfaces must be cleaned often since they readily collect dust and fingerprints.

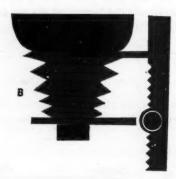




SUPPORTS DO DIFFER

The single post (A), if well built, offers a firm support. However, if housing is raised for maximum magnification, vibrations can easily occur. The cantilever type support (B) and the triangular truss (C) offer more vibration-free enlarging.



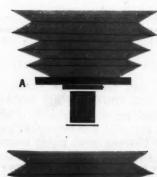


FOCUSING: TWO MANUAL SYSTEMS

Helical focusing mount (A) consists of two tubes, one of which screws in and out of the other. This mount is common to enlargers which take smaller size (16mm, 35mm) negatives since its limited focus normally lets you use only one focal length lens. Rack and pinion focusing mount (B) is more versatile. The bellows permits a greater range of focusing and therefore different lenses can be used. However, a bellows requires care since it's apt to wear out faster.

CAMERA OR SPECIAL LENS?

Although camera lenses are designed primarily for photographing objects in a three-dimensional field, they can often be used for enlarging (A). If you want the sharpest prints it's best to use lenses designed especially for enlarging (B). These lenses are built to project a two-dimensional object (the negative) onto another flat plane (the print paper). On some lenses it's difficult to see f-numbers in the dark. A few lens boards (B) have a built-in lucite dowel which projects a small beam of light onto the f-numbers.

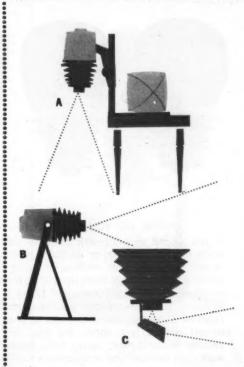






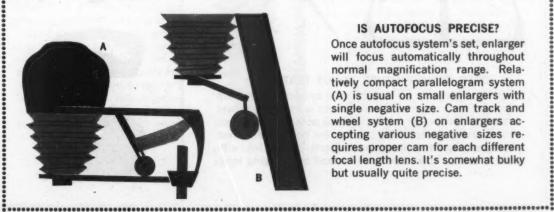
DISTORTION CONTROL: DO YOU NEED IT?

To correct perspective distortions caused by camera position, such as the convergence of parallel lines, you must either tilt the enlarging paper or the negative when making the print. The simplest way is to tilt the negative, using an enlarger with tilting lamp housing (A) or a tilting negative carrier (B). However, with (A) you must use a small lens opening to get adequate sharpness over the entire print area. With (B) you have an alternative method. You can also tilt the easel. In addition, a lens board which tilts at the lens axis (C) provides a method of producing a sharp print when correcting distortions without stopping the lens down.



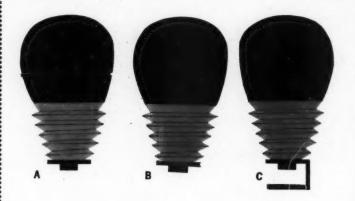
CAN BIG BLOWUPS BE MADE?

Single post supported enlarger (A) can be rotated to project image on floor. However, weight must be placed on baseboard to prevent tipping. If enlarger can be turned at 90° angle (B) for wall projection, weight needn't be placed on baseboard. If you can't tip or rotate your enlarger, you can use mirror accessory (C).



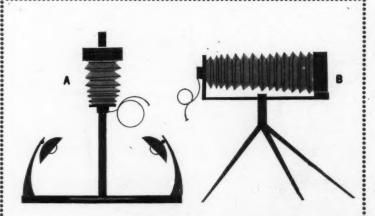
IS AUTOFOCUS PRECISE?

Once autofocus system's set, enlarger will focus automatically throughout normal magnification range. Relatively compact parallelogram system (A) is usual on small enlargers with single negative size. Cam track and wheel system (B) on enlargers accepting various negative sizes requires proper cam for each different focal length lens. It's somewhat bulky but usually quite precise.



WHERE DO YOU PLACE THE FILTERS?

If you intend to print with multiple contrast black-and-white enlarging paper, or do color printing, the enlarger should offer a simple method of using filters. If you're printing color, a large filter drawer above the negative (A) which accepts acetate correction filters is best. However, if you're going to enlarge with black-and-white multiple contrast paper and you'd also like to print color, the filter drawer placed just above the lens (B) which accepts smaller filters is most handy. Filter holder under lens (C) works but reduces image sharpness slightly.



DOES IT HAVE OTHER BONUS FEATURES?

Some enlargers can be turned into a camera for close-up copying (A), and general view camera work (B). A sheet film or roll film holder, available as an accessory, replaces lamp housing on top of the bellows. For best results when photographing three-dimensional objects, camera lens with built-in shutter should be used instead of enlarging lens.

CAN YOU CHANGE LIGHT HOUSINGS?

Many enlargers can use more than one light source. Often an enlarger with a double condenser illumination system such as (A) can be fitted with diffusion light systems, cold light (B), or frosted incandescent (C). Condenser enlargers produce an image which may appear too grainy and too sharp. By removing the condenser lamp housing and replacing it with a diffusion unit, the same negative will print with less noticeable grain, less contrast, and will appear less harsh. A single diffusion enlarger can use many different focal length lenses, whereas each focal length lens change in a condenser-enlarger necessitates a change in condensers.



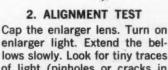
TAKE YOUR ENLARGER HOME AND CHECK THESE POINTS

If you've purchased a new enlarger, perform these tests to make sure it'll produce top quality results. Why not put your old enlarger through the same paces?



1. VIBRATION TEST

With your enlarger on a level floor, and no one in the room who might cause vibrations in the floor, raise the enlarger lamp housing to its highest position. Here vibrations will be most noticeable. Then gently push the top of the support post or stand, horizontally. A slight vibration of housing and post is allowable. However, both should stop vibrating in a few seconds. Enlargers that vibrate when heavy traffic passes your house are to be avoided.



lows slowly. Look for tiny traces of light (pinholes or cracks in the bellows). Focusing should be smooth. If it's not, search for missing gear teeth or for uneven friction wheels in focusing mechanism. To check lens alignment, place a carpenter's level on or against lens board. If all tilts are in zero position and baseboard is level, then lens and negative carrier should check out level with baseboard and with each other—if floor is level.



3. ILLUMINATION TEST

With negative carrier empty, raise enlarger to project an area of about 11 x 14 in. on easel. At full aperture, focus projected carrier edge sharply. Make a test strip as if you were using a negative to determine enlarging time for light gray tone. Then, using this time, make a gray print on 11 x 14 paper. Close lens down three openings. Increase exposure 31/2 X. Make second print. Compare two prints. First should be darker in center than at edges. Second should have even gray tone. Here's why: Although most enlargers project more light through negative center than through edges at widest aperture, light fall-off should not be apparent when the lens is closed to opening you would normally use for printing.

PORTRAIT HERBERT KEPPLER SHADOWS ALEXANDER LIBERMAN TO LEARN HOW HE PRODUCES THE DEEP, RICH PORTRAITS OF FAMOUS FRENCH

The camera is the most precise recording instrument ever devised. More clearly than any drawing, more concisely and truly than any words, it can preserve a split second of reality.

ARTISTS WITH HIS

If this camera record is done with purpose and sensitivity that record approaches an art. Such a document is the photography of Alexander Liberman, art director of *Vogue* magazine and Conde Nast Publication's. With two Leicas and Kodachrome, often employing only existing light. he has delineated the lives, the studios, the hidden corners of an entire art movement in France. Over 40 artists, known universally by their painting or sculpture alone, have taken real form through Liberman's efforts. Without yielding to the temptation to dramatize, pose, or alter what he and his camera see, he has faithfully built a most important artistic document, the artist in his studio: Rouault, Picasso, Chagall, Giacometti, Braque, Leger, Ernst among others. His pictures have an inherent depth, clarity and technical precision any photographer could envy. Although he originally had little thought of having them published, Irving Penn, a close associate, persuaded him that they ought to be. Vogue reproduced many of them with erudite and brilliant analyses of the artists written by Alexander Liberman. As I write, the Museum of Modern Art is presenting a show (October 29 through January 10) of Liberman's work, "The Artist in his Studio." Afterwards it will tour museums throughout the country.

While Liberman's subjects have an undeniable (Cont. on page 75)

Inside foldout: Artist Vlaminck at work in his studio. (Editors note: Picture is printed in reverse.)













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△ Kupka

√ Van Dongen

▽ Giacometti



ALEXANDER LIBERMAN TELLS HOW HE PHOTOGRAPHS ARTISTS:

"Van Dongen (see page 73) was working in his gigantic studio with light coming from a very high skylight. He had been showing me his older paintings. For a moment, he paused in front of his easel, on which was a painting of two red odalisques. Since the studio was so large I was able to move backwards and use my 135mm lens. It flattened space-in this case bringing the women forward into the same plane as the artist. I made the shot with a tripod. I often use exposures as long as 1 sec. because I feel they produce an added color intensity in the photograph. This picture, however, could have been de at 1/5 sec. I don't remember the appring, but I imagine it was rather large."

"Vlaminck (see inside foldout) sat painting at his easel in his dark country studio. At that time I was using a 90mm f/2.5 Angenieux lens at about 1/25 sec. It was the slowest speed I dared use because I was afraid Vlaminck would move."

"Kupka (top picture, opposite) rested in his garden, where high trees and deep shade prevent sunlight from ever penetrating. This explains the slight underexposure which I naturally didn't plan, but I do feel adds to the picture. I think I was lucky to get the picture at all. The lens was a Summicron f/2 at full aperture."

"Giacometti (bottom picture, opposite) didn't know I was taking his picture. He sat meditating. Since his was a very small room, about 10 x 15 ft., I used a 28mm wide-angle lens I then owned to encompass as much of it as possible. Light was entering from a very long window and, as usual, I used the slowest shutter speed I could and a tripod."

attraction in themselves, his techniques in recording the greatest detail and depth, and the richest color, have added immeasurably to the results. To see how he achieves them, let's leave art director Liberman at his desk in New York and follow Liberman the photographer.

We pick him up in Paris on his way to an artist's studio. Where is Liberman's gadget bag? The cameras around his neck? He carries only a small aluminum Halliburton traveling case. Within are Leica M3 and and Leica IIIf camera bodies, a 50mm Dual Range Leitz Summicron f/2 for the M3, a 25mm Nikkor f/4, a 135mm Nikkor f/3.5, two Weston Master II exposure meters, a Mighty Light electronic flash unit, and a few cable releases. He has no assistant since he believes that a third person only gets in the way, disturbs the relationship between photographer and subject, and may make the artist self-conscious. You would scarcely think him a photographer save for the tripod he carries.

Across the sky scud the small clouds which make exposure in Paris a photographer's nightmare. Liberman has an appointment with an artist. The artist is famous. Perhaps he knows who Liberman is, what Vogue means. Perhaps he doesn't or thinks them unimportant. After nursing prospective purchasers and fending off crackpots, tourists, and rubberneckers all day, the artist may consider Liberman and his cameras one more annoyance to be barely tolerated and dispensed with as quickly as possible. Liberman may have to wait until the artist can see him. The hours depart—and sunlight with them. The sky clouds, the artist is in ill temper. The paintings that Liberman hopes he can use in the background this day are not here. All these are Liberman's problems.

He enters the studio with no preconceived idea of what he will be photographing. He works as swiftly as possible so as not to bore or tire the artist. He has kept. his equipment simple—the basic minimum for efficiency. He fears that a spare meter or lens may find its way into a picture. There is little preliminary talk, for Liberman feels that the camera itself is perhaps the best way to break the barrier between photographer and artist. He asks the artist to work as if he, Liberman, were not present. This is a hard thing for the artist but Liberman does his best to melt into the background, to observe without being observed. He disturbs nothing. He rearranges nothing. He feels no one can improve the artist's instinctive use of the area. If the studio is large, Liberman may shift to the 135mm lens because of its ability to narrow depths, to bring the artist into a closer relationship with his paintings and surroundings. The Leica M3 is loaded with Kodachrome because Liberman feels that Kodachrome is the truest color film, the most realistic, the finest-grained, that it enlarges wondrously and produces a sharpness even in low light where other color films may be faster and able to show more in shadows but are less sharp. Also Kodachrome processing, he thinks, is more uniform. In all the years he's been using it, failures due to processing have been minute. He uses no filters. (Continued on page 126)

LOOK, MA, NO FILM!



WHILE OTHER PHOTOGRAPHERS are searching for higher and higher exposure indexes and trying every new film on the market, Burt Owen has settled for an exposure index of 3 and no film at all! And the results have been of more than gimmick proportions. For in the highly competitive world of commercial studio photography, this new technique has paid off. Says Owen: "More than half of my 'mood things' are shot on paper negatives these days. Art directors really go for this quality."

As with so many things Burt Owen has done in the past, this new approach was the result of old-fashioned curiosity, a quality with which Owen is highly endowed. He wondered what would happen if he shot directly on paper and enlarged from that paper negative. So he cut a piece of enlarging paper to fit a 4x5 cut film holder, loaded this in his Speed Graphic, shot with a flashbulb, developed, and had a paper negative. He liked the results. The enlargement had an old-fashioned quality. As was the once-used orthochromatic film, enlarging paper is fairly blind to red. Skin is very dark, lips black. With further experimentation, Owen discovered that he could use the bigger grain structure from 21/4 square negative for special purposes.

There is no doubt that paper will not replace film for all situations. But for "mood things," it's an exciting and inexpensive experiment. For details on how to do it yourself, turn the page.—J.B.

ELECTRONIC FLASH was used by Burt Owen > for all pictures of children, as they won't hold a pose long enough for daylight work.



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LOOK MA, NO FILM! (cont.)





 \triangle GLARE EFFECT on edge of bottles is result of using soft focus lens at maximum aperture. Daylight and tungsten, 1 second.

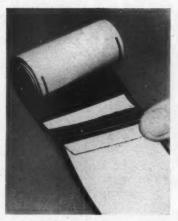
MAXIMUM QUALITY, obtained from large negative (8 x 10) and electronic flash is shown by photos above right and on page 77.

HEAVY GRAIN was obtained by using \triangleright small (2½ x 2½) section of 4 x 5 negative for 11 x 14 enlargement. Electronic flash.

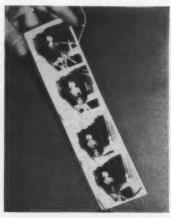


ALL YOU NEED TO KNOW TO SHOOT WITHOUT FILM

Start with that basic element, paper; in this case, single-weight glossy enlarging paper. (Double weight is too thick for use in roll film cameras.) If you are using cut film holders, just cut to fit in the darkroom, using a safe light. If you are shooting with a 21/4 reflex, use an old roll of paper backing for 120 roll film. Cut the paper in 21/4 strips. If you use 16 x 20 paper, you will get seven strips of eight exposures each. Attach paper as in picture, right, insert spool in camera just as if it were a regular roll of film. Use an exposure index of 3 to 5 and take a reading in the important subject area. Higher indexes such as 4 or 5 are best for outdoor bright sun scenes. Use lower number 3 for tungsten lit indoor scenes. Until you get used to such low readings, take out insurance by bracketing (shoot one stop over and one under) your normal exposure. Keep a record to check results. If you are shooting indoors, make sure there is lots of light on important masses as shadows tend to fill in heavily. If you make a mistake in exposing try to make it in favor of overexposure as this is easier to correct in development. Develop your paper negatives in Dektol; 2:1 for outdoor exposures; 1:1 or straight for indoor work. If your shots don't seem to be developing rapidly enough, dunk the paper into hot water, or else use hot developer. After you have dried the paper negative, you can make contact prints (keep emulsion to emulsion for this) or enlargements. Always place negatives emulsion side down in carrier. Burt Owen tried it the other way once and reports that the image was so diffused as to be unusable. Expose paper negatives as you would any ordinary negative. The paper negative is easy to retouch "even with elephant hands," reports photographer Owen, much easier than a regular negative. Just follow the techniques shown at right. Remember, the smaller the negative, or area which you choose to enlarge, the larger the grain structure. Owen obtained an almost oatmeal-like effect in the portrait opposite. He feels, and so de we, that the experiments with paper negatives have just begun. Have fun!



ATTACH STRIP of paper, emulsion side up, to paper backing with tape, ¾ in. below old tape mark.



PAPER NEGATIVES shot on 2½ strips from 16 x 20 paper look like this. You get 8 exposures per strip.



RETOUCHING section of paper negatives is simple. Photographer thought some areas too dark . . .



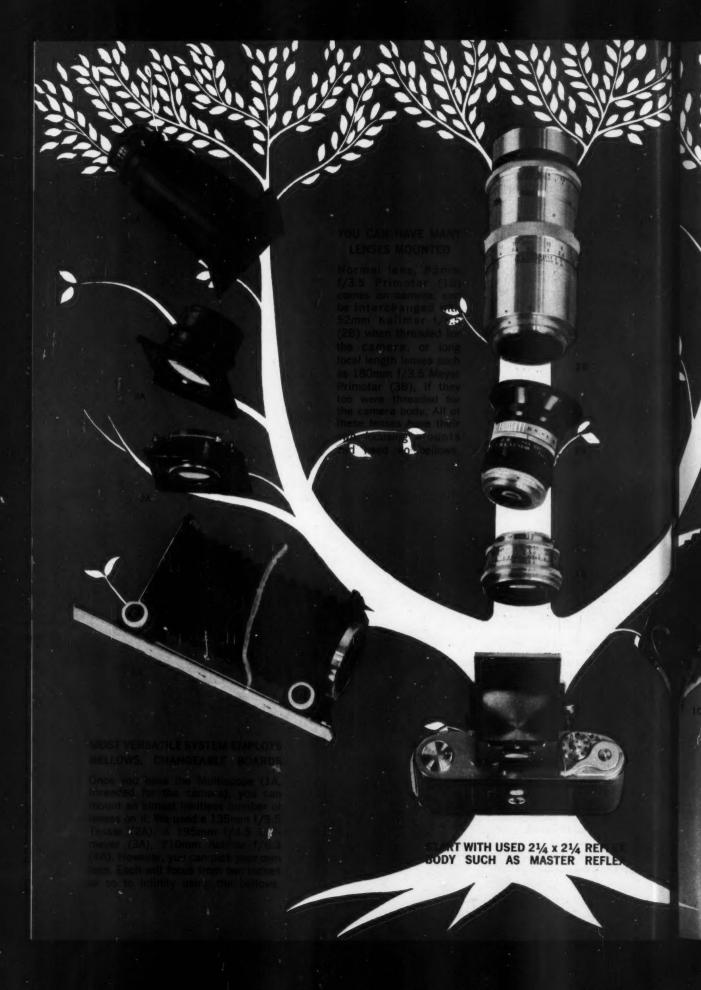
QUICK CONTACT print showed too heavy shadow areas in cheek, neck, on eyelids. So he picked up a . . .



. . . SOFT PENCIL, darkened areas on back of paper negative, held it up to light to check progress . . .



FINAL ENLARGEMENT demonstrates radical difference in comparison with heavy shadowed print, above.



camera's regular lenses for close-up work. Extension tubes (2C) give added length to bellows, allow you to mount such blockbusters as 250mm t/4.5 Bausch & Lomb Tessar (3C) if you have it threaded for the Master.

GROW YOUR OWN SUPER 2½ REFLEX CAMERA

THE CLITTERING ARRAY of used camera bargains jammed together in a photo store window or announced in advertisements makes a true photographer—amateur or professional—salivate more surely than a dinner bell.

The prices are attractive. Cameras costing hundreds of dollars when new, sell ten or more years later for fractions of their former tags. A second look, however, often dispels the magic. The lens has no automatic diaphragm, the viewfinder no projected frame, there's no coupled exposure meter, no hydromatic or power brakes. Yet even so, among the dusty back shelves of many a camera shop lie some sensational camera bargains—for the photographic dilettante who's willing to browse, hunt, test, choose, and finally come up with something fascinating and wild.

Ergo, Modern's story on how to make a sensational super 2½ reflex from old material available in many camera stores throughout the country. How would you like a superfast acting 2½ x 2½ single-lens reflex camera capable of using lenses from 52mm to 240mm focusing from three inches to infinity with complete

precision? Interested? This way please.

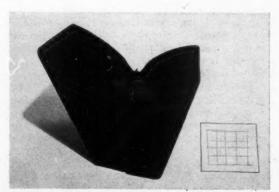
First let's start with the camera body. It's no secret that the $2\frac{1}{4}$ x $2\frac{1}{4}$ single-lens reflex has been dying a slow death over the last 25 years except for the most expensive cameras. (Certainly the Hasselblad and Bronica are great machines.) As a result, many a photo dealer has upon the shelf a splendid array of $2\frac{1}{4}$ x $2\frac{1}{4}$ single-lens reflexes which can be had at a nominal price. MODERN picked up a Master Reflex, about 6 years old, in fine condition for \$65. The camera has a focal-plane shutter with speeds from 1 sec. to 1/1000 sec., built-in X flash sync., a coated 85mm f/3.5 Hugo



CHECK THE SHUTTER: Weak point of any 2½, single-lens reflex is focal-plane shutter. Open back before you buy, make sure shutter works at all speeds.



EXAMINE THE FILM TRANSPORT: After your shutter check (above) test film wind mechanism to see it doesn't slip, that counter works. Also check mirror for tarnish.



CONSIDER THESE ACCESSORIES: Headache with older reflexes is dark ground glass. For about \$10 a repair man can install Rolleiclear screen. Magnihood also helps.

Meyer Primotar lens (1B), rapid wind lever, etc. Here was a complete camera at a price slightly less than an interchangeable back on a more modern reflex. Also available at the same store were a group of Korelle-Reflexes, a camera of similar construction whose manufacture goes back to 1938 or 1939. These, with Tessar f/2.8 and f/3.5 lenses, were selling for \$35 to \$40. If we wanted a less expensive but newer camera body, we could have purchased a Soligor 66 or Kalimar Reflex complete with coated 80mm f/3.5 preset lens for \$48. These cameras are all subject to the same sicknesses-faulty curtain shutters and bad film transports -so check them out thoroughly (see illustrations at left) before buying them. We've picked on these four single-lens reflex cameras for two reasons. First, all of them can generally be repaired if either film wind or shutter curtain goes awry, and secondly, all have a simple screw thread interchangeable lens mount which can be inexpensively fitted with an astounding array of lenses, as you'll see.

We selected the Master Reflex because it had the largest diameter lens mount and would give us more leeway in fitting lenses. The Kalimar, Soligor, or Korelle-Reflex have comparatively small lens mounts which might require some surgery to make larger. It can be done. At first we used the camera as is to reacquaint ourselves with its operation. We were delighted with the ground-glass image, the ability to stop the lens down to see our depth of field. The camera's Primotar lens, a Tessar formula by the way, checked out sharply.

The 21/4 family tree grows

We scouted around some more and found our little acorn could grow oakwards in three different directions (see illustration, page 80.) The three branches allow expansion with two different bellows systems plus straight focusing mount lenses specially threaded for the Master. For \$25 we could buy a S.O.M. Bellows unit (1C) for the Master Reflex from Spiratone, Inc., 369 Seventh Ave., New York, N.Y. For \$10 we could add a set of extension tubes (2C). We figure we could not only make close-ups with the camera's own lens, using this equipment, but we might be able to get some old long-focus lenses in barrels, and have them fitted to the bellows. By using the bellows' knurled knobs we'd have a fairly sensational superspeed telephoto camera.

A second plan of attack: what could be found in the way of regular lenses in focusing mounts that could be fitted to our Master Reflex (middle tree branch, page 80)? Here again, we were to be in luck. But perhaps our most successful do-it-yourself unit for the Super Reflex was the Multiscope (1A), a bellows attachment with interchangeable lens boards, available from Aetna Optix, 350 West 31 St., New York 1, N.Y. Although this bellows lists at \$50, the promise of interchangeable lenses of all sorts—as well as interchangeable camera bodies—was attractive indeed. (Later we found a few used Multiscopes for \$35 or so.)

In quest of interesting and inexpensive lenses for our camera, we got in touch with Sterling-Howard, 561 East Tremont Ave., New York 57, N.Y. This company,



FROM SNAIL TO INFINITY: Besides shooting at standard distances, the Super 21/4 Refiex will focus incredibly close. 135mm f/3.5 Tessar on Multiscope, Mighty Light electronic flash, f/32, Plus-X film made this shot.

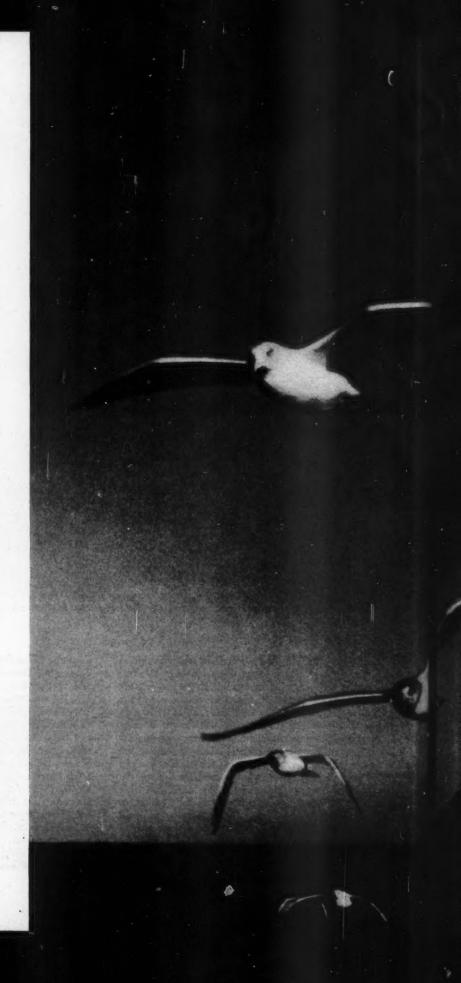
we learned, not only had a rather extensive collection of odd lenses but also a complete machine shop to adapt them to all sorts of cameras. First, we had a back Multiscope board (\$2.85) threaded so it would fit the Master Reflex. This cost \$15. Fitting the Multiscope to the Master proved rather tricky-the metal housing for the track kept getting in the way of the tripod socket on the camera. We got around this by mounting the Multiscope on the camera so that the track was at the left side of the camera rather than at the bottom. An alternative method was to attach a small extension tube to the Master and then screw in the Multiscope.

Now we investigated the various lenses that could be placed on the Multiscope. We found that the 135mm was the shortest focal length that would focus to infinity. For \$17.50 we could purchase any number of excellent uncoated four-element lenses in Compur shutters-Schneider Xenars, Steinheils, etc. Zeiss Tessars in 135mm length cost \$10 more. Coating would add another \$10. Uncoated lenses in barrels at 150, 175, 180 and 195mm lengths ranged upwards to \$39.50. We picked a 135mm Tessar f/3.5 in Compur shutter (2A, \$27.50) and a 195mm Leitmeyer Doppel Anastigmat Sytar (3A) f/4.5 in barrel. Mounting either of these lenses in a \$2.85 Multiscope board cost \$1.50. We also found a brand-new spectacular 10-in. (250mm) f/4.5 Bausch and Lomb Tessar coated in barrel for \$49.50 (3C)! And there are more of them at Sterling-Howard. Alas, it did not fit the Multiscope since its barrel was larger than the lens board. But it did fit the S.O.M. Bellows when threaded for the Master thread (\$15). However, the lens was at such a long focal length that a short extension tube was needed in addition to the bellows to (Continued on page 132)

KOSTI RUOHOMAA'S RECIPE FOR DRAMA

THIS PICTURE of a lobster fisherman, taken by Kosti Ruohomaa in Maine, has a precision and quality any of us might envy. It was not an accident, nor was it a deliberately posed setup. It is the result of the simple yet effective approach which Ruohomaa takes to all of his subjects. Shoot, follow the subject, focus, pause, watch the background, look for expression, change angle—these are basic techniques which anyone can use to produce more exciting photographs.

Ruohomaa's contact prints from his self-assigned Monhegan Island project tell the story of his thinking and approach. To follow him through the steps which led to the photographs right and on pages 88 and 89, turn the page.





COMPOSITION: GULLS ARE KEY TO THE PRECEDING PHOTO

When Ruohomaa decides to make a photograph, he investigates his subject from every possible point of view. As he investigates, he shoots. This is not to say he takes the same picture twenty times. Each contact print differs from the next: he will move in close; in the next frame, he may move back. He may change from the horizontal to the vertical format. He may change angle, or lighting, or exposure, as he approaches the combination which will best express what he feels. In photographing the lobster fishermen below he started shooting when the men began to unload and bait their traps. First, a horizontal showing both fishermen (trame 1). Ruohomaa shifted position slightly and took several verticals, trying to frame only the figure in black (frame 2). Then, the gulls appeared (frame 3). "I suddenly realized that the men themselves wouldn't make a very interesting picture and that this was what I had been waiting for. I shot a lot-and fast-cursing and praying that the gulls might be in the right place at the right time." Next, one fisherman moved out of

range, and Ruohomaa made the shot in frame 4, and on the preceding page. He followed up with a similar vertical (frame 5) and continued to shoot until the gulls flew off again (frame 6). Ruohomaa had calculated exposure before beginning to shoot, taking a reading from his hand with a General Electric Golden Crown meter. In making this picture his main problem was limited space. "Although I was using a 35mm wideangle lens on my Pentax, I still found it almost impossible to move far enough away from my subject on the small boat to get all I wished in the viewfinder. If only the lens had been wider! There's not much room on lobster boats, and I could hardly move around at all. I also needed as much depth of field as possible so that I could keep the gulls in focus without using a very small aperture." Ruohomaa's problem was compounded by the fact that he also wanted to use an orange filter to cut through haze, to darken the sky and to increase contrast. To solve all this he used Tri-Xa fast film not usually recommended for use outdoors. He was able to expose at 1/250 and f/8, which gave him the necessary depth of field and a sufficiently fast shutter speed to stop the movement of the gulls.





MOGD: BAD WEATHER'S AN ASSET IN CREATING IT. SEE NEXT PAGE

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"The lobstermen of Monhegan work under rough winter conditions; and I needed bad weather to show this," says Ruohomaa. Luck was with him. There were two full days of snow and wind. Although he does a great deal of work with the Rolleiflex and the 4 x 5 view camera, he used a 35mm exclusively on this job. "If you come to the end of a roll in the middle of a blizzard, it's almost impossible to change without going indoors. The 36 exposures come in handy. I use a reflex camera rather than a rangefinder, since I prefer to see and to compose on the ground glass." On the first morning of the storm, Ruohomaa went out to photograph early, dropping in at the general store periodically to get warm and to clean up his cameras. The village itself,

which covers an area of about three city blocks, was deserted. He took a number of photographs: a landscape (frame 1), a truck (frame 2), a wagon (frame 3). The light level was very low, and kept changing. He checked his meter constantly, taking an overall reading, and stopped down one stop to avoid overexposure. Finally a woman came out of the store and headed for her home. Ruohomaa shot once (frame 4), then tracked her as she went up the main street. As she passed a gate, he shot again to make the picture which appears in frame 5 and on the following two pages. Within a few seconds he framed a vertical (frame 6). Ruohomaa continued to follow the woman until she reached her home. The exposure with Tri-X film and shutter set at 1/100 sec. varied between about f/5.6 and f/11. All film was processed by inspection in D-23 at a custom laboratory in New York City.-P.C.





ANSCOCHROME HOW DO EKTACHROME HOW DO THEY DIFFER?

Editor's Note: In his brilliant new book, Eye, Film and Camera in Color Photography (John Wiley & Sons, Inc.), Ralph M. Evans, Eastman Kodak Company's Color Technology Division Director, has written precisely and clearly on many aspects of photography. A review of the book appears on page 14. Herewith a sample of Evans' incisive style concerned with a very common inquiry: How do the various color films differ?

In the processes in which the finished picture consists of dye images in the same film that was exposed in the camera, it is apparent that the dyes must either have been present before exposure or have been introduced into the film afterward. Both methods are known, but the latter method is gradually being superseded by the former.

To simplify the discussion we shall not attempt to describe all the possible ways that have been tried to produce images by these two approaches. Basically the two most successful approaches have been (a) to bleach out existing dyes and (b) to form the dyes in the film.

the silver compounds that they contain are altered by the light. This metallic silver record of the light is the familiar black-and-white "negative" of the ordinary camera. The formation of such a silver negative is the basic operation characteristic of all present day (color) processes with one exception, to be considered presently. It is the fundamental process of all photography as we know it today. Its unique position comes from the enormous multiplication involved. The initial modification due to light is so slight that even if it is actual metallic silver, it is totally invisible. The amount of silver finally produced may represent a multiplication of as high as 100 million times. Hence these processes

These two results are accomplished somewhat as follows.

When photographic emulsions are exposed to light,

made with their use. No other type of photographic process known at the present time approaches this efficiency.

The operation of reducing the silver compounds to

have high light efficiency and very "fast" film can be

silver is known as "development" of the image, and the material causing the change is called the "developing agent." The result, of course, is due to a chemical reaction in which the silver compounds are "reduced" and the developing agent is simultaneously "oxidized." We do not need to consider this any closer. The result is always reduced silver and oxidized developer plus other products of the reaction that so far no one has been able to use to operate a color process, although they often modify the result profoundly.

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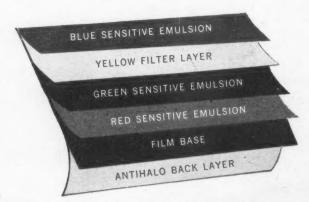
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In the dye bleaching processes the developed silver image is used as a basis for bleaching the dye near each grain of silver. The second method of producing a dye image is at present more widely used (Kodachrome, Ektachrome, Anscochrome, etc.). It consists of the formation of dye as part of the development operation. During reduction of the silver compounds, oxidized developing agent is formed in direct proportion to the amount of silver reduced. This oxidized developer is a quite reactive compound, and by having a



KODACHROME DYE COUPLERS ARE IN SOLUTIONS: After all the black-and-white negative images are developed in the three emulsions, red layer is re-exposed to red light, developed in cyan dye-forming coupler solution. Then blue emulsion is exposed to blue light, developed with yellow dye-forming coupler. Finally green emulsion is re-exposed with white light, developed with magenta dye-forming coupler.

suitable chemical agent present it will immediately react or "couple" with this material to form a dye. By the choice of suitable developing agents and couplers, dyes of the proper color and having the desired characteristics may be formed. One requirement is that this dye must be insoluble, and when this requirement is met the dye is formed inside the gelatin of the emulsion and becomes a permanent part of the film.

Two ways of having this coupler present during development have been used, both leading to similar results but requiring quite different handling steps. The first of these is to have the couplers present in the developing solution during development (Kodachrome) (see illustration, page 90). This requires water soluble coupling agents. The second method consists in putting the couplers in the emulsion during manufacture (Ektachrome, Anscochrome) (see illustration at right). This latter method requires couplers that are insoluble and inert photographically. but it leads to a real simplification of final handling. In modern multiple-layer coatings in which the red, green, and blue sensitive emulsions are coated on top of each other and only a single film exposed in the camera, each layer must produce a

dye image of a different color. In the method involving couplers in the developing solution this means that each layer must be developed separately. In the second method, however, these couplers are already present in their proper layers and development in a single solution then produces the required colors simultaneously. Obviously from the standpoint of final handling, even if not from that of manufacturing, the latter method is greatly superior. For this reason only the latter type of process has reached the market for the photographer who desires to develop his own pictures.

Taking the two above methods of arriving at a final dye image, namely, dye bleaching and dye formation by coupling, let us now consider how we can arrive at a satisfactory color picture. Particularly, we want to consider what the film, the exposure, and the processing are like.

Consider first a modern multilayer film. Fundamentally such a film consists of a plastic material called the film base. On one side it is coated by a series of three emulsion layers, sometimes coated directly on each other and sometimes separated for one reason or another by layers not containing light sensitive materials. The three light sensitive layers are for the purpose of producing the red, green, and blue light records that we noted are required by all processes. The inert layers are either to isolate the others chemically or to absorb light of certain colors. In camera film the red record is usually on the bottom (next to the film base), the green in the middle, and the blue on top.

BLUE SENSITIVE EMULSION

YELLOW FILTER LAYER

GREEN SENSITIVE EMULSION

GEL SEPARATING LAYER

RED SENSITIVE EMULSION

GEL SENSITIVE EMULSION

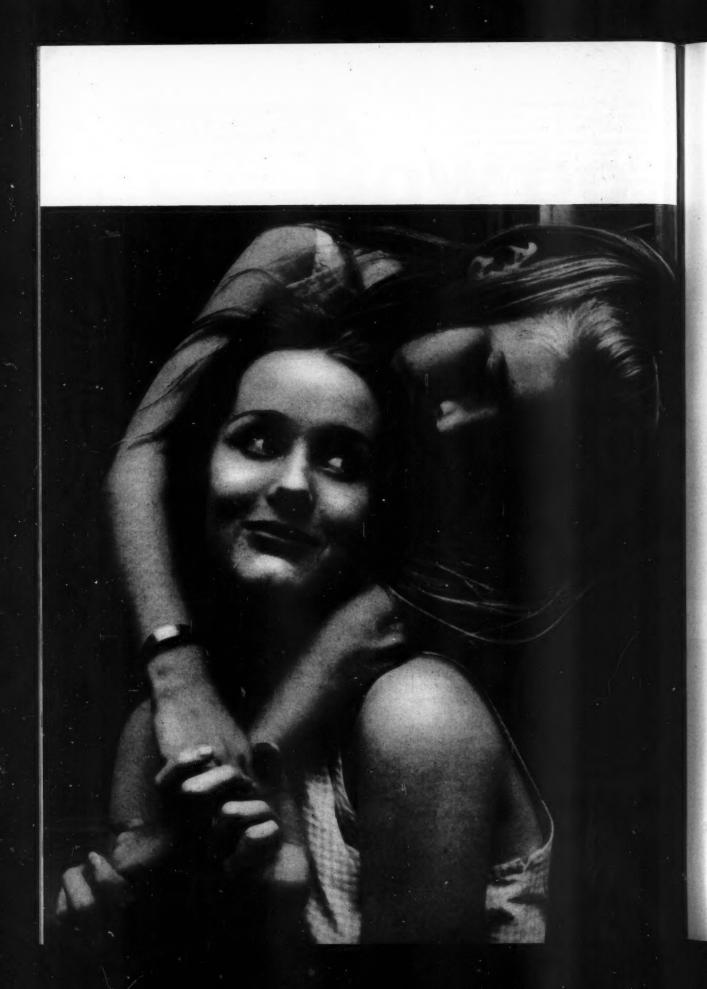
ANTIHALO UNDER LAYER

FILM BASE

EKTACHROME DYE COUPLERS ARE IN THE FILM: After exposure, black-and-white negative images are developed simultaneously in each of the three sensitive emulsion layers—blue, green and red. Each layer already has its insoluble and inert dye coupler right in the emulsion. A single color developer produces three differently colored dye images at one time. Anscochrome has similar layers and development. Such a film structure is far easier for home processing than Kodachrome, which requires extensive photofinishing equipment.

The top emulsion is sensitive only to blue light, the second to blue and green, and the bottom to blue and red. White light entering through the top layer exposes it to blue light. Any blue light not absorbed in the top layer is stopped by a blue absorbing (yellow) interlayer. Thus only green and red light passes through to the second layer, which is sensitive to and absorbs green light. The red light passes on through to expose the bottom layer. This, in essence, is the nature of all present day multilayer camera films. In some the order of the red and green sensitive layers may be reversed, but the three separate records are always formed. It has been a dream for many years that some day all three of these emulsions might be mixed and yet retain their individual identities. This would require only a single coating operation and will undoubtedly be accomplished.

Before going on to consider the step of producing the dye image from these exposures, we might consider briefly the requirements of such images. We noted earlier that the final picture should transmit red, green, and blue light in the same ratios that are present in the original scene, so that white light passing through the finished picture would in fact result in the same ratios for each area as were present in the original scene. It is somewhat easier to consider this requirement if we take specific examples. Suppose the light from a red object contains only red light with no green and no blue. This light strikes the film and passes through to the bottom layer without (Continued on page 132)



ONE TINY FLASH BULB

rr's HARD TO BELIEVE the picture at the left was taken with just one flashbulb—but it was. No burned-out highlights without details, no harsh shadows, no gray areas around the nose. Instead we have a soft, even illumination, plus the quality and detail you would expect from a carefully floodlit portrait.

Although every year millions of flashbulbs are sold and very few of the pictures made have the excellent quality you can actually get from flash, with a supply of the small M-2 bulbs, or the even smaller all-glass AG-1's, it's not difficult at all.

When we suggested to photographer Dan Budnick that he should try out peanut-sized bulbs, he scoffed at the prospect. As a confirmed devotee of electronic flash, he felt the tiny bulbs would be cumbersome, take time to change, and produce too little light. But he would experiment. He came back from his assignment full of enthusiasm—for flash. On the next two pages you'll see why. Every picture was taken with light supplied by one flashbulb—and a tiny one at that.

Budnick used the bulbs indoors and outside, bounce and direct, and even as far as 50 ft. from his subject. The versatility of these little bulbs permitted him to use a variety of techniques.

The advantages of easy portability and low cost of the small bulbs are quite obvious. Not so obvious, perhaps, is the fact that these bulbs are so powerful—much brighter than many electronic flash units. Witness the outdoor shot on page 94, which was made with an M-2 bulb at a distance of 50 ft. And for even more light, you can use an M-5, which fits the same socket as the

M-2 and provides at least twice as much light. With this amount of light, you can use slower, finer-grain films, smaller apertures, and get better enlargements.

Since most leaf shutter cameras accept a variety of flashbulbs, and are synced at most speeds, we asked Budnick to use a camera with this type of shutter—in this case, the Konica IIIM. His Heiland Tilt-A-Mite flashgun takes such bulbs as the M-2, M-5, or standard bayonet bulbs—5, 25, etc.—without an adapter, and can be tilted for bounce flash. In addition, for the smaller all-glass AG-1 bulbs he needed a special adapter, with a small reflector and bayonet base, that fits into the Heiland unit.

Budnick loaded the camera with Kodak Panatomic-X, stuffed his pockets full of bulbs, and took his wife, Toby, to visit friends. He had noted the guide number information on the back of the bulb packages, and knew it would provide him with the proper aperture at a given shutter speed, if he divided the guide number by the distance (in feet) from bulb to subject. Since he wanted to stop down his lens for more depth of field, he took advantage of the built-in safety factor in the film's ASA speed rating and shot at double the rating—E. I. 40 instead of E. I. 20. According to the table on the bulb package, this gave him a guide number of 110 for the M-2 at 1/30 sec. The AG-1's are not quite as powerful as the M-2's. For these, Budnick used 75 as his guide number at 1/125 sec.

However, Budnick knew that the guide number was only an indication, determined by the manufacturer on the basis of an average size room with medium bright colored walls, and that he had to vary his lens setting for non-average rooms. For a large or dark room, he used a larger lens opening than that indicated by the guide number; for a small room, or one with highly reflective surfaces, he used a smaller opening, since more light was reflected onto the subject.

Open up for bounce

For bounce, Budnick opened up his lens two or three stops further, depending on the height of the ceiling and color of the walls. In the picture of Toby with the little girl draped around her neck (page 92) he bounced the light from an M-2 off a 10-ft. ceiling. With his 110 guide number, the direct flash exposure, at a distance of 5 ft., was f/22. For bounce, he opened up three stops and shot at f/8 at 1/30 sec.

Don't let higher ceilings throw you. Toby and friend seated on a bench in a restaurant (page 95, upper left) were photographed by the light of an M-2 bounced from an over 12-ft. ceiling. Budnick's guide number indicated f/6.3 at 1/30 sec. for direct flash. Normally, for a height of 12-odd ft., he would (Continued on next page)

increase exposure by three stops, but because of the light tone of the walls and ceiling, he opened up only

 $1\frac{1}{2}$ stops, shooting at f/4 and 1/30 sec.

Budnick's picture of the two girls (page 95, bottom) is another example of how much light these small bulbs throw, even when bounced. The girl in the background is about 10 ft. from the camera, while Toby, in the foreground, is only 2 ft. away. Incidentally, you can imagine how this picture would have looked if direct flash had been used-Toby's face overexposed with washed out detail, the other girl underexposed.

You don't have to stick to the straight bounce-offthe-ceiling method. You can get special effects by bouncing the light from a wall. Here's how Budnick got the interesting side-lighting effects in the picture of mother and child (page 95). He wanted to spotlight the baby and play down, almost eliminate the figure of the mother. He had the mother hold the baby at an angle between herself and the intersection of the wall and ceiling, and he bounced the flash off the intersection. Thus, the baby got most of the light. Using an AG-1. Budnick calculated an exposure of f/8 at 1/125 sec. for direct flash. Opening up three stops for bounce, he shot at f/2.8.

If you own a camera with a focal-plane shutter, don't give up on M-2's or AG-1's. Set the shutter at the X-sync speed (or 1/30 or 1/25) and fire away.

By the way, your subjects will appreciate bounce flash as they won't be blinded or have a white spot before their eyes after the picture has been taken.

Flash convert confesses

Reformed electronic flash photographer Budnick says one advantage of the tiny bulbs is their ability to produce a lot more light than many electronic flash units. And since their flash duration is not as brief as the electronic flash emission, you can vary the guide number slightly by changing shutter speeds.

He did, however, run into a minor snag. The AG-1's have two wire prongs, on the bottom, which make contact with the circuit in the flashgun. Sometimes, in transit, pressure on the prongs squeezed them too close to the base. It was a simple matter to pry the prongs out a little with the fingernail, so the proper contact could be made. Since most flash units have a bulb tester, you'll know when the AG-1's aren't making contact.

Once you've become familiar with the capabilities of these tiny bulbs, you too will have bulging pockets and overflowing ash trays.-D.L.M.

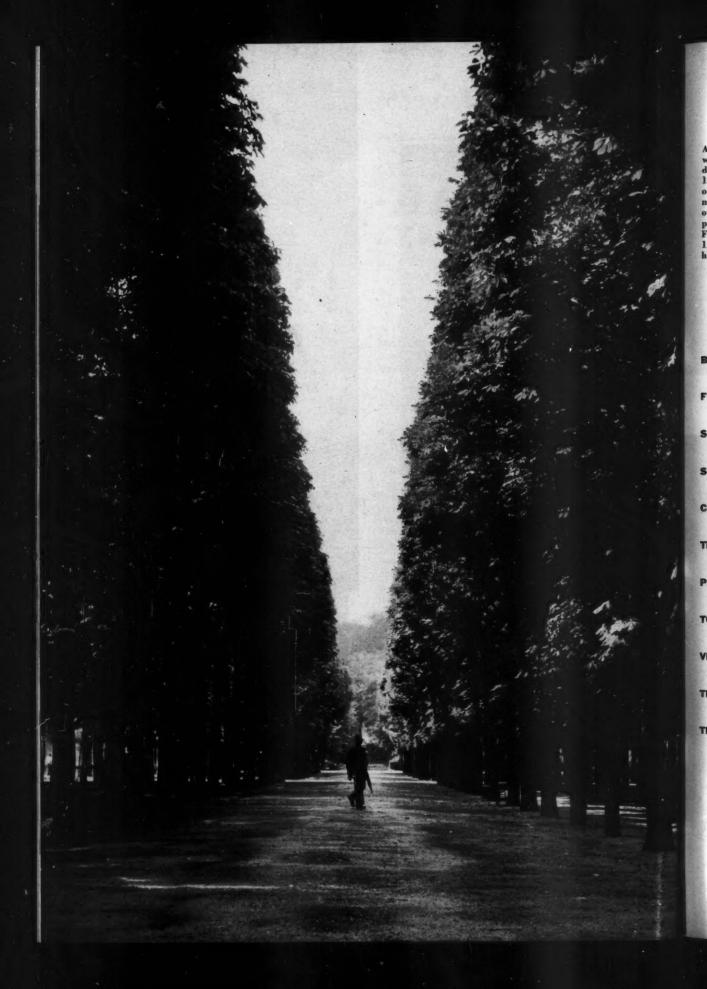
△LOTS OF LIGHT FROM DIRECT FLASH: You can't bounce off the sky but the little bulbs have enough direct power to light up an outdoor scene at night. An M-2 caught Toby walking at a distance of 50 ft. You can see detail in leaves above her. F/2.8 at 1/30.







THREE SUCCESSFUL USES OF BOUNCE: Ceiling might have been too high for average electronic flash unit but was perfect for tiny flashbulb. Photo, top left, gets benefit of high, light-colored walls, ceiling. At f/4 and 1/30, Budnick was able to light up entire room with one M-2 flashbulb bounced off 12-ft. high ceiling. Subjects near and away from camera (8 ft. separate figures in lower left photo) get same amount of light if ceiling bounce is used. No foreground washouts, no darkened areas in background. Exposure was f/4 at 1/30. However, by using unorthodox bounce techniques, a variety of unusual effects is possible. The baby being held aloft at an angle, above, gets most of light while mother is practically in the dark. Budnick aimed flashgun at corner of room where ceiling and two walls meet. Light from the AG-1 bulb bounced back at the right angle to illuminate just the baby's face, back, and arms. F/2.8 at 1/125.



All photographs taken in overcast weather, with Rolleiflex. Opp. Jardin du Luxembourg, Paris, France, 1955. Plus-X, 1/100, f/8. Rt. bank of North Sea inlet, Hamburg, Germany, 1956. Plus-X, 1/100, f/8, overdevelopment and high-contrast printing. Rt. below, near Main River, Frankfurt, Germany, 1956. Plus-X, 1/100, f/8, overdevelopment and high-contrast printing.

BY USING PEOPLE AS THE

FOCAL POINT IN HIS LANDSCAPES, BILL PERLMUTTER

SUCCEEDS IN CREATING EXCITING DESIGN. BY CONTROLLED DEVELOPING AND

PRINTING, HE ALTERS

TONAL VALUES FOR UNUSUAL

VISUAL EFFECTS. FOR

THE COMPLETE STORY, SEE

TEXT ON PAGE 122.



DISCOVERY no. 48



LOW ANGLE catches reaching arm, tense face for an unusual composition. Carl Crewson, Guelph, Ontario, Canada, using a Rolleicord V with Plus-X film, took

an exposure of approximately 1/250 at f/8. The dramatic close-up of the arm was then made even more effective by close cropping.

MONTHLY

Keep your eyes open for action!

DON'T WAIT for jet planes to pass your window—there's action in an outstretched arm, high speed in a foot race. Whether you stop it or blur it, whether you use it for its own sake or as an element in design, action can add interest and drama to your pictures. These pages show four approaches; you'll find hundreds more all around you.

Anyone may enter any number of black-and-white prints in Modern's "Monthly Contest." Pictures must be 4 x 5 or larger. Polaroid prints may be submitted in original size. Your name, address, and all technical data must appear on the back of each print. No entry blanks are required. Please enclose a stamped (first-class postage), self-addressed envelope if you want us to return pictures we're unable to use. Send them to Columns Editor, Modern Photography, 33 W. 60 St., New York 23, N. Y.

TELE LENS (400mm Novoflex, on Leica IIIf) was chosen by Hans and Klaus Paysan, Stuttgart, Germany, to make this circus acrobat dominate the picture. Speed of 1/50 was enough to produce wing-like blur of arms; fast HP3 film allowed smallish aperture (f/8), bringing background into near-focus.





BLURRED by 1/10 sec. at f/11, picture gains drama from leader's sharp face, due to his being poised in mid-stride. Alexander Hubrich, Mannheim, Germany, used Retina IIIc, Heligon 80mm lens.

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STOPPED in mid-gallop by 1/200 sec. at f/3.5, these circus ponies and zebra still convey speed by their ruffled manes and leaning angle. N. A. Elkins, Stan-

more, Middlesex, England, used a Leica with 50mm Elmar lens and HP3, chose effective moment when animals were head on against dark background.

MODERN

MODERN PHOTOGRAPHY'S exclusive monthly equipment report section devoted to informative, unbiased field tests of equipment submitted to the editors for review.

TELE-ROLLEIFLEX: THE NEW LONG LOOK



Manufacturer's Specifications: Tele-Rolleiflex 21/4 twin-lens reflex camera. Lens: 135mm f/4. Carl Zeiss Sonnar 135mm f/4 Heidosmat viewing lens. Shutter: Synchro-Compur MXV, speeds from 1 to 1/500 sec., plus B. Other features: Same as Rolleiflex 2.8E. Price: \$400. Importers: Burleigh Brooks, Inc., 10 W. 46 St., New York 36, N. Y.: Ponder and Best, 814 N. Cole Ave., Hollywood 38, Calif.

If ever there was an all-around, versatile roll film camera, the Rolleiflex in its quarter century of existence has definitely proved that it's it. However, from time to time, despite the camera's legendary reliability and ease of handling, mutterings are heard, usually among professionals, that the 75 or 80mm fixed lenses have their limitations—particularly in medium to close-up work. Some picture editors claim they can always tell the

work of a Rollei by the perspective in the photo. Such pictures are dubbed "the Rollei look." Most crying need, everyone has said, is for a Rollei with long lenses to eliminate apparent distortion in shooting close ups.

Well, here 'tis, two matched 135mm lenses housed in a Rollei body just slightly larger and heavier than a regular f/2.8 Rollei body. As can be seen, however, the lenses themselves do project a bit forward.

We won't discuss the standard, well-known Follei features but concentrate on those 135mm lenses.

The view on the ground glass is impressive indeed—the long focal length helps pinpoint positions of sharpness quickly. Although the closest focusing distance is 8 1/2 ft., the makers have come up with two sets of matched Rolleinars close-up lenses in twin mounts which focus from 9 ft. 2 in. to 4 ft. 5 in. and from 4 ft. 6 1/2 in. to 3 ft. ½ in. respectively. Each set has a built-in, parallax correcting prism. The first set mentioned has a hinge arrangement so the optics can be swung out of the way in a split second for normal shooting distances. Of course, by using close-up lenses you are in effect decreasing the focal length of those 135mm lenses slightly to 129mm and 124mm, to be exact, with each set of Rolleinars.

An interesting innovation in the Tele-Rollei is a removable glass plate within the camera, in front of the film. With such a long focal length lens, it's understandable that the maker of the camera should want to keep the film plane as precise as possible.

You've got to inspect the glass each time you load. Beware of thumb-prints, grease or dirt that sticks. These will cause greater harm to the negative than if they were on the lens itself! However, we shot most of our pictures with the glass in place, and each picture we took came out scot-free.

The camera handles easily and there is no front heaviness that you might have expected from the long lenses. You'd have to go far to find a better portrait camera.

We then took the Tele-Rolleiflex out

on actual field tests. Besides checking the lens, we were also interested in discovering how well the glass plate kept the film flat-in terms of actual

picture sharpness.

With the glass in place, overall sharpness at f/4 was very good with only the slightest fall-off in definition at the corners and a tiny amount of flare. Maximum sharpness was achieved at f/8—and this was sharp indeed. This sharpness held right down to f/22.

Curiously enough, when we removed the glass plate, the loss of sharpness was almost too minute to notice.-H.K.

AGFA SUPER SILETTE USES COUPLED METER



Manufacturer's Specifications: Agfa Super Silette Automatic 35mm rangefinder camera. Lens: Agfa Color Solinar 50mm f/2.8. Shutter: Prontor SLK with speeds from 1 to 1/300 sec., B and MX synchronization. Other features: Coupled exposure meter, automatic parallax correction, single-stroke film advance lever, rewind knob. Price: \$109.95. Importer: Agfa, Inc., 516 W. 34 St., New York 1, N. Y.

Just about everything is recessed in this camera—film advance lever (on the camera back), rewind knob, window for the coupled exposure meter, and even the manual setting frame counter.

To use the coupled meter you first adjust the exposure index dial and then set either f-number or shutter speed on the lens barrel. You may choose either one. Then, the other ex-

TESTS

the newest cameras
the latest films
important accessories

posure control is rotated to center a pointer which appears both on the top of the camera and inside the finder. A red warning appears in the finder and window on top of the camera if there is insufficient light for good exposure.

The system provides one of the fastest means we've ever seen for taking off-hand snapshots.

The film advance lever on the bottom rear of the camera works efficiently. The throw, however, is a bit long and does necessitate removing the camera from one's eye. Incidentally, wearing glasses is no hindrance to seeing the entire field through the viewfinder. The rangefinder is just adequate in dim light but works easily under normal outdoor lighting.

Our shooting tests proved that the camera handles easily. The shutter is extremely quiet. There were times—particularly in the midst of city traffic—when we weren't sure if it clicked.

And frankly, we found the generously sized rewind knob to be easier on the fingers—if, perhaps, a bit slower—than some rewind levers we've used in the past.

The lens on the Agfa Super Silette Automatic produced excellent sharpness even at maximum opening. Falloff at the corners was unnoticeable unless closely scrutinized. Flare was negligible at widest lens opening. Sharpest opening proved to be f/5.6.

—M.A.M.

AIRES VISCOUNT HAS F/1.9 LENS

Manufacturer's Specifications: Aires Viscount 35mm rangefinder camera. Lens: 6-element 45mm f/1.9 Coral. Shutter: Seikosha-SLV, with speeds from 1 to 1/500 sec., plus B and self timer, and MX sync. Price: \$69.95. (Camera must be bought with ever-ready leather case—price, \$12.50.) Importer: Kalimar, Inc., 1909 S. Kingshighway, St. Louis 10, Mo.

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Here is a medium-priced 35mm rangefinder camera with a fast f/1.9

lens that handles well. Diaphragm, shutter speeds, and LVS numbers are on top of the lens barrel. Also on the side of the focusing ring is a distance scale for an 80mm telephoto auxiliary lens, which screws into the front of the lens, but was not available.

The single-stroke rapid advance lever which, incidentally, needs only a single short 90° throw, sticks out sufficiently from the camera back so you can keep your thumb in the ready position. By releasing the shutter with your right forefinger and focusing with your left forefinger (about a quarter turn takes you from 2 \(\frac{7}{3} \) ft. to infinity), fairly rapid picture taking is possible. The fold-away crank, with rotating tip, on top of the camera, gives you a fast film rewind, but you have to keep your finger on the button on the bottom all through the rewinding.



Although it doesn't have automatic parallax correction, the single window finder has two projected framelines—gold for the 45mm and red for the 80mm lens. Both frames can be seen completely by those wearing glasses. Although the primary rangefinder image is extremely bright, the central secondary image is rather small and can become difficult to see.

Our tests showed the lens to be adequately sharp when wide open, a small amount of sharpness falling off at the edges, with some flare. When stopped down to about f/4, sharpness was very good and remained so all the way down to f/16.

This camera has one of the quietest shutters we've come across in some time.—D.L.M.

BRIGHTER VIEWFINDER ON LATEST RICOH 500



Manufacturer's Specifications: Ricoh 500 35mm rangefinder camera. Lens: Riken Ricomat 45mm f/2.8. Shutter: Seikosha SLV with speeds from 1 to 1/500 sec., and B., self timer, MX sync. Other features: Cross-coupled LVS, single-stroke trigger film advance, automatic zero reset exposure counter, accessory shoe cordless flash contact. Price: \$59.95. Importer: Ricoh Camera Co., 521 Fifth Ave., New York 17, N. Y.

Two years ago Ricoh introduced its Model 500 35mm rangefinder camera with the horizontal trigger on the base for rapid film advance. Now they've come out with a revised version, at a lower price, featuring an improved viewfinder and a redesigned shutter with a built-in self timer. The viewfinder has a bright projected "floating" frameline with automatic parallax compensation. When we tested the 500 we found the viewfinder bright enough to permit shooting in a darkened room. The diamond-shaped rangefinder, though a little small, was easy to use because of the distinct color separation between the two images. Most impressive in the viewing system is the brilliant frameline. The eyepiece is big, allowing spectacle wearers to see the whole frame.

This model incorporates features of the earlier version—the trigger film advance, which permits fairly fast sequence shooting; duo-lever focus-

(Continued on page 102)

MODERN TESTS

(Continued from page 101)

ing; and the fold-away rapid rewind crank.

The lens of the 500 showed acceptable sharpness, when wide open at f/2.8, with little noticeable fall-off at the edges. Between f/5.6 and f/8—the best aperture—sharpness is very good. With the lens set at f/22, the sharpness fell off slightly.—D.L.M.

MAMIYA 16 AUTOMATIC HAS COUPLED METER



Manufacturer's Specifications: Mamiya Automatic 16, ultraminiature camera taking 16mm film loaded in special cassettes, no rangefinder. Lens: 25mm f/2.8 Mamiya Sekor, focuses from 1 ft. to infinity. Shutter: Speeds 1/2 to 1/200 sec., B, sync for all bulbs at 1/25 and below. Finder: Brightframe finder with parallax correction indicators, folds flush with body when not in use. Other features: Built-in, diaphragm-coupled exposure meter. Aligning shutter speed indicator with meter needle sets lens aperture for proper exposure. Coupled film wind, shutter cocking, frame counter operated by knurled wheel. Sliding lens cover locks shutter to prevent accidental exposure. Built-in sliding K2 filter. Price: \$69.95. Importer: Mamiya, Div. Caprod Ltd., 111 Fifth Ave., New York 3, N.Y.

If you're looking for a box-type snapshot camera in the "You push the button we do the rest" tradition, the Mamiya 16 Automatic is probably not for you. But if you're after a small, compact, easy to use camera that enables you to photograph under most lighting conditions this is a good one.

The Mamiya has a number of handy features built in: K2 filter, lens covershutter lock, swivel mount viewfinder. And a very important point about the camera, as far as we're concerned, is the way these and the other controls are built in. The design is clean—nothing protrudes when the finder is snapped down to flush with the camera body. This, together with its small size (about 4 x 1 % x 1 1/4 in.) makes it easy to carry the camera in pocket or purse.

The camera performed well. Exposures indicated by the meter proved accurate, and the meter was sensitive enough to give readings even in quite low light. Enlargements were perfectly satisfactory. The film was developed according to the manufacturer's recommendation, and most of the pictures enlarged to the usual 3 x 4 in. size for ultraminiature on silk textured paper.

A lens test, from which we made 11 x 14 enlargements, proved that the Mamiya could turn out pictures with definition comparing very favorably to results from other ultraminiatures.

One criticism: the etched frame markings in the finder disappear when shooting against the light. However, this is true of all cameras with similar finders.—P.C.

YASHICA HAS EASY LOADING MAGAZINES



Manufacturer's Specifications: Yashica Y 16, ultraminiature camera taking 16mm film in special magazines. Lens: Fixed focus 25mm f/3.5 Yashinon. Shutter: Metal focal-plane, speeds 1/25 to 1/200 plus S, X sync. Other features: Automatic resetting frame counter. Price: \$34.95. Importer: Yashica Co. Ltd., 234 Fifth Ave., New York 1, N. Y.

In practically every respect the Yashica Y 16 differs from most or all of the other ultraminiatures on the market.

The camera body itself is an empty

shell containing lens, exposure controls, and viewfinder. Most of the apparatus for film advance is built into the plastic magazines which the film comes in. These magazines are relatively large—almost as large as the camera itself-and have an intricate system of light traps, film compartments, rollers, knobs, and reel which transports the film past the film plane and around behind it into a compartment for storage. To advance the film (and cock the shutter) just turn the large, knurled wheel located on top of the camera about a quarter turn counter-clockwise. The rest takes care of itself.

This system makes the Yashica the easiest still camera to load we've ever seen. All you do is slip the magazine into the camera. You don't have to open the back (in fact, there isn't any back to open), thread the film, or check to see that it's seated and moving properly. When the roll is finished, slide the lock on the left-hand side of the body forward and the complete magazine pops loose ready for removal and replacement. When you insert the new cartridge, the automatic frame counter resets to start.

The entire design and construction of the camera is unusual. The body is a heavy metal casting. The main part of the body is light gray baked enamel; the front section, on which shutter and aperture indicators and controls, lens, and viewfinder are located, comes in five colors: gold, charcoal gray, green, rose, and blue.

The camera is beautifully—and functionally—designed. All controls are easy to reach and to use; all indicators—shutter speed, aperture, and frame number—are legible.

Speed and aperture are controlled by ridged wheels located on the bottom front of the camera directly under their respective indicators.

The shutter has an unusually slow speed setting, designated "S," which is a cross between the conventional bulb and time. Here's how it works. Depress the release completely in one motion—and the speed is approximately 1/10 sec. If you need a slower speed, press the release gently until the shutter opens. You can leave your finger there or remove it; in either case the shutter will remain open until you depress the release completely.

The usual pocket size 3 x 4 in. snapshot enlargements we had made seemed to be adequately sharp. 11 x 14 enlargements made for our lens test (a size not recommended for ultraminiature), when viewed from a distance of about 3 ft., showed that all the openings provided equally good definition.—P.C.

NOVOFLEX TELE LENS GEARED FOR ACTION

Manufacturer's Specifications: Novoflex Follow Focus unit with 300mm f/5.6, 240mm f/4.5 lenses. Other features: Basic unit can be used with Novoflex lenses up to 640mm. Price: 300mm \$257.50; 240mm, \$249.50 (both complete). Importer: Burleigh Brooks, Inc., 10 W. 46 St., New York 36, N. Y.

Looking more like a super duper junior space pistol than a picture taking instrument, the Novoflex Follow Focus 300mm lens is in truth one of the easiest handling 35mm single-lens reflex camera lenses we have ever used. The Novoflex may also be used with 35mm rangefinder cameras equipped with reflex finders, and with motion picture cameras that have throughlens viewing and focusing. Focus on a moving subject can be continuously adjusted by squeezing the pistol grip which provides the solid support required for sharp pictures with long focal length lenses.

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Not being particularly over-muscled, we've always had a problem with hand-holding long telephoto lenses for long periods. But with the Novoflex setup, we could take our time and wait for the shot we wanted.

But what about the lenses? How good are they? Very good. Even at maximum aperture with the 300mm—f/5.6—only the slightest bit of falling off at the corners could be noted. At f/8, the image was adequately sharp over the entire picture area. The sharpest image appeared between f/8 and f/11.

Our tests included everything from birds to people to sports cars to textured brick walls. In each case results were gratifying.

We also tested the Novoflex 240mm lens and here again results were admirable—whether for sports, nature, or portraits. Sharpest lens opening was between f/5.6 and f/8.

Incidentally, the 300mm and 240mm units are interchangeable on the Novoflex Follow Focus mount. In fact, you buy only one pistol grip focusing unit for all available Novoflex lenses—ranging up to 640mm.

The 300mm lens focuses from 15 ft. to infinity, but with the right close-up tube, it can be used from 7 to 14 ft. The 240mm focuses from 9 ft. to infinity, but with an adapter its focusing range is 5 to 9 ft.

We did note some vignetting with one of the cameras tested. However, when cameras were switched; the vignetting disappeared. Good idea to test the lenses on your camera before buying.—M.A.M.

1959 INDEX

For the convenience of its readers, MODERN has prepared this index to the articles which appeared on its pages during 1959. Designed to help you find any item with a minimum amount of searching, it has been separated into categories according to subject matter. Movie material is listed in a separate section.

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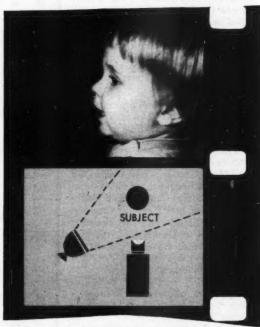
ONE LIGHT MOVIES

TIRED OF ELABORATE MOVIE LIGHTING? ONE CAREFULLY PLACED FLOOD CAN DO WONDERS.

YOU MAY BE a movie maker who rails against the rules of movie lighting. If so, you're in good company. Quite often, the best movies do result from following standard procedures involving several light sources—but every now and then it's fun (and informative) to experiment in departures from the sacred norms. In fact, that's just what MODERN is advising this month—as long as you have a lens with a speed of f/2.5 or faster. Instead of encumbering yourself with all the paraphernalia of regular lighting equipment, why not try just one light? First of all, you may just come up with some interesting footage. Secondly, after all the fills and frills of lighting have been pared away, the main light is the important one. Since this is the first of four articles on lighting, it might be a good time to reconsider your lights—find out what each can do, what they can do as a team, what effects you can achieve. Each month we'll add a light until we reach four-enough for about every movie under average home conditions.

Right now, we're concerned with what you can do with a single light—either a photoflood (No. 2) or a reflector flood with its own built-in reflector (EBR). When you buy the lamp make sure that it has the proper color temperature for the film you are using. For example, Kodachrome Type A requires a lamp of 3400K color temperature for good color rendition. Super Anscochrome should be exposed with lamps of 3200K for best results. You can use daylight color films with blue lamps (see illustration, bottom this page) for situations where you may be mixing daylight and Tungsten light sources.

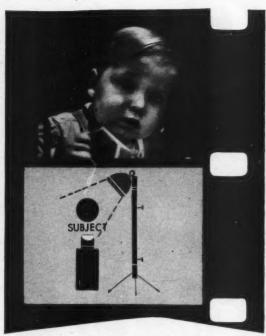
The best way to determine exposure is with an exposure meter. Read important highlights where you want detail, open lens slightly for some detail in dark areas.—M.A.M.



DIRECT FLOOD FOR CLOSE-UPS: Set light slightly higher than camera for best results. Maintain separation between background and subject. Background will be darker, accenting foreground.



SUNLIGHT WITH FLOOD TO SIMULATE DAYLIGHT: Place subject so that sun from window lightens shadows created by single flood. Use blue bulb and daylight film for best color.



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DIRECT OVERHEAD FOR STRONG HIGHLIGHTS: Set flood 7 or 8 ft. from floor, on light stand. Aim directly for strong highlights in hair. Reflecting surface, as sheets in crib, fills shadows.



WALL BOUNCE FOR SILHOUETTE EFFECT: Set flood between wall and subject, aimed at wall. Reflected light meter reading should be taken from wall for most effective contrast.



TWO-WALL BOUNCE FOR MEDIUM SHOT: Set flood in corner so that it strikes both walls. Keep subjects 3 or 4 ft. from wall for workable aperture. Light striking third wall helps fill shadows.



CEILING BOUNCE FOR DIFFUSED LIGHTING: Set flood as close to ceiling as possible for maximum illumination. Setup offers sufficient light for medium close-ups, provided ceiling is white.

the explorer



A dramatic new concept in slide projectors

It looks different . . . and is. This remarkable new projector offers more automatic features than all other slide projectors combined. Built-in automatic timer changes slides for you at intervals of 5 to 60 seconds, forward or reverse. An all-new Point-A-Ray Remote Control operates four ways from anywhere in the room to let you (1) advance slides, (2) hold any slide, and (3) reverse the cycle for a second look. Fourth way—aim it at the screen, press, and a dot of light appears to point out details!

The versatility of the Explorer begins with the new optically polished Micro-Mount, which accepts 35mm, Bantam or Superslides in 2x2 cardboard as they come from the finisher. The unique construction of the Micro-Mount itself positively locks each slide in focus—the first truly dependable way to prevent "popping." The new Micro-40 Tray includes 40 Micro-Mounts and is designed so that slides in Micro-Mounts can enter only one way—right side up!

There's even more: focus, tilt and timer controls are all at the rear and lighted; top doors give instant access for 2-second editing or lamp changing; and it's all self-contained—no cover to remove or replace! Optional "zoom" lens! Exclusive Bell & Howell Filmovara lens, zooms picture to fit the screen wherever you show your slides!

Now at your photo dealer's-Bell & Howell Explorer 754 (500 watt), \$149.95, as little as \$15 down. Other 300 and 500 watt Explorers from \$79.95, as little as \$8 down.



Bell ε Howell

FINER PRODUCTS THROUGH IMAGINATION



New Point-A-Ray Remote Control. The only remote that lets you (1) go forward, (2) reverse, (3) hold any slide, (4) point out details with a brilliant dot of light. Standard on Explorer 744, 754 and 754Y.



New Micro-Mount. Positively locks each slide in focus – completely prevents "popping." Crystal-clear Micro-Mount takes all 2 x 2 cardboard-mounted transparencies – 35mm, Bantam, and Superslides.



Complete access for instant editing! Open top door for 2-second fingertip removal or replacement of slide in aperture. Load all 40 slides this way if you wish, and see each slide on the screen as you load!



Exclusive "Zoom" Lens. Bell & Howell's Filmovara lens lets you zoom the picture to fit the screen by varying focal length from 3½ to 4½ inches—without moving the projector! Standard on Explorer 754Y.



Handsome and highly portable. The Explorer travels easily wherever you go. No separate cover, completely self-contained.

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Don't force motion picture humor. Make the most of comic situations without using camera tricks.



Humor is one of the most difficult motion picture themes to tackle successfully-for the amateur just as much as for the professional.

There is a great danger that the

film will go off in one of two directions so labored and contrived as to be a bore, or so subtle that no one understands it except the film maker.

All too often tricks are substituted for imagination or inspiration. For example, the standard comedy bitused by professionals and amateurs with monotonous regularity-is the speeded-up action sequence. The scene is filmed at 8 fps and then screened at normal projection speed. It was funny the first time it was done-but like an original Joe Miller joke, it needs modification to get a chuckle these days.

A trick must have a purpose

Instead of merely using slow camera speed to speed up action for its own sake, the device might be used as a foil. For instance, suppose the scene deals with a little boy stealing cookies. We might shoot at normal speed as he approaches the jar and then cut to a close-up of his hand reaching inside the cookie jar. Cut again to mother entering the door. Cut back to a shot of the hand withdrawing from the jar. The last shot might be filmed at 8 fps. Thus, action is speeded up with a specific purpose in mind—to heighten the comical effect of the "thief" being caught in the act.

But humor in film should go beyond mere tricks. The humorous idea is one of the most difficult to develop. One should study what other film makers have done. A friend of ours, a really great film maker, feels that the study of motion pictures is the only true way to learn about film making.

"Other people's ideas, approaches, and techniques give rise to original thoughts in the people who see their work. One isn't stealing when one seeks an inspiration in what has

(Continued on page 112)

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MOVIE MAKER

(Continued from page 108)

already been done-providing the intent is not to merely imitate, but to seek an original direction."

One of the finest humorous film makers for the amateur to study is Rene Clair. His Entracte is a masterpiece of film making. Certainly he uses the mechanical potential of the camera. But more important, he employs the lens to show the ridiculousness inherent in supposedly solemn situations.

In filming a parody of a funeral procession, he concentrates in one sequence on the legs of the mourners. The hearse has started to run away from the procession and the mourners race after it. Shooting at slow motion speed, he pictures legs slowly rising and falling. In one shot, he shows a man leaping and landing on the same leg. While most funerals are hardly humorous, Clair aimed his wit at those who make almost a profession of mourning the dead. The same technique may be applied to a rather tedious parade or even a boat race.

Another Clair film worth looking at is the silent Italian Straw Hat. There's a scene in this film where a woman

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desperately tries to inform her husband that his tie is improperly adjusted. Everyone else sees her frantic signals and attempts to fix his own tie. The husband ignores her completely.

You may want to use this approach to add a light touch to a film of your own. For example, it may be that you are shooting a scene where several children are attempting to find a prize. Someone signals to an individual youngster in an attempt to give him a clue. Everyone sees the signal except the one for whom it was intended. All with the one exception-arrive at the hiding place at the same time.

The availability of Clair's films may be checked through film libraries such as the Museum of Modern Art and Cinema 16 in New York.

But not only European film makers have made excellent humor films. No one employed the camera as well as Charlie Chaplin. He used humor touched with sadness to express the plight of the so-called "little man." None of his early films was elaborate -yet millions still laugh at the basic humor he instilled into each one.

Even his later pictures, Modern Times, for one, used situations commonly accepted as devoid of humor. He extended the nature of his subject to the point where the almost sardonic humor became apparent to everyone.

(Continued on page 136)





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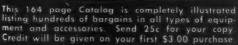


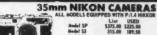
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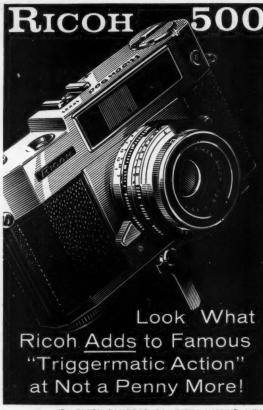
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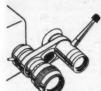
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(Continued on page 118)

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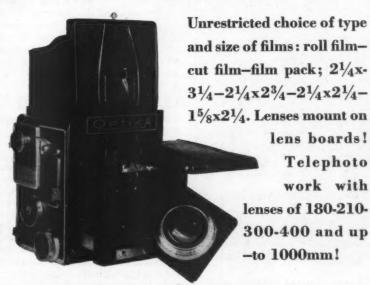
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DISCOVERY

(Continued from page 97)

Paradoxically, the most interesting point about Bill Perlmutter's landscapes has to do with his utilization of people. By juxtaposing very large natural forms and small human figures, he achieves a great feeling of space and in addition makes a visual comment on the nature of man's relationship to the world.

There is something surprising about the comment which he makes. First of all, let's describe the photographs. On page 96 a man walks through an avenue of towering trees. At top page 97 two people hurry along the bank of an inlet which stretches straight across the frame; the figures are insignificant compared to the width of the water separating them from the opposite shore. At bottom page 97 three figures come toward the camera as gnarled trees raise huge barbed hands toward the sky.

More than mere landscapes

It sounds as though the human forms are completely dominated by nature: trees tower, a river stretches, branches resemble huge threatening hands. But this is not the case. In each of these pictures the figures are the focal point. By making the figures the center of visual interest, Perlmutter gives them prime importance. In addition, since each of the people is obviously captured in motion, the photographer seems to depict a world in which inanimate formstrees, rivers, buildings-are set irrevocably in space, and in which only man is free to move and to act.

The simplicity of line and of tone in these landscapes depends more on Perlmutter's photographic technique than on



Bill Perlmutter

nature. Sometimes good technique is as much a matter of knowing when to develop and print normally (see photograph on page 96) as it is of using un-(Continued on page 124)

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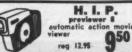


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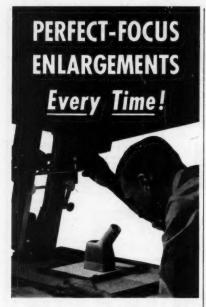




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DISCOVERY

(Continued from page 122)

usual developing and printing procedures. In both photographs on page 97 Perlmutter overdeveloped the film and printed on high contrast paper (#10 filter on Varigam) to drop out and flatten the middle tones.

Perlmutter wasn't born with this awareness of what to do when. He has had his own darkroom since he was in high school over ten years ago. He studied for four years at the New York City College Film Institute with avantgarde cinematographer Hans Richter and with critic Arthur Knight. He quit movies and turned to stills, the most closely allied field, 1) because movies are impossibly expensive, and 2) because they are so time consuming.

After his discharge and return to the States, in 1957, he worked as a freelance illustrator, mostly for the men's magazines. Recently he has decided to go into business in addition to doing photographic work. In this way he will be able to pick and choose assignments, and will have more freedom to photograph to please himself.-P.C.

How to do

A small bottle of aluminum paint is a handy item for you to keep around the house. With it you can easily touch up a scratched satin-finish flash re-



flector, as shown above, or make an inexpensive fill-in reflector. Second illustration below shows a smooth white window shade being worked on



with a piece of cotton and aluminum paint. After painting, the shade should be backed with wood or with stiff cardboard .-- Chris Lecakes



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ARTIST PORTRAITS

(Continued from page 75)

Liberman has also brought along his Leica IIIf, planning to use one camera for color, the other for black-and-white. As usual, however, he finds himself working with the M3 alone, first loading with color, then, after finishing that roll, with Kodak Plus-X, a film which he considers extraordinarily sharp for its speed. He measures the light from the skylight or large window with a Weston Master II set for Weston film indexes. He does not "push" film and he shoots each picture twice, just in case.

What is he photographing? He shows the artist at work, being careful to include the man, his painting and the subject (see foldout, pages 71-72) He pictures the artist in front of his work (page 73). He depicts him meditating (page 74) or relaxing in his garden. Using the Dual Range Summicron in its close focusing range, he photographs the artist's hands, palette, cans of paint and palette knives, brushes carelessly thrown in artistic disarrangement onto a newspaper on the floor. He uses a tripod for as many pictures as possible—sometimes the steadiest hand may have an imperceptible tremor. He takes no chances. His exposures are on the full side. Long shutter speeds-1/5 sec. to 1 sec.-allow him to close down his aperture so he can include all the detail in depth, foreground to background. His aim is to reveal the maximum.

Slower speeds-richer color

In his search for depth, while slowly moving toward longer shutter speeds at smaller apertures, Liberman noticed that the long-duration speeds produced deeper, richer colors than the shorter ones even though the exposures them selves were the same. He felt that this quality which seemed to add a dominant blackness to his pictures also tended to produce within the picture area a cohesiveness which pictures made with faster exposures lacked.

Sometimes he retakes the same picture eight times, varying shutter speed and aperture to keep exposure constant. Back in his office he can choose the one picture which provides the right mood.

Far back in one dark recess of the artist's studio, he sees a detail—some rolled up canvases, an old sketch on the wall. There is not enough light to make the photograph. Liberman unlimbers the Mighty Light, consults the manufacturer's exposure tables, shoots by direct light. He never tries bounce light since he has little time to experiment with the vagaries of exposure inherent in bounce.

He is finished long before the artist expects he will be. There is much left (Continued on page 130)

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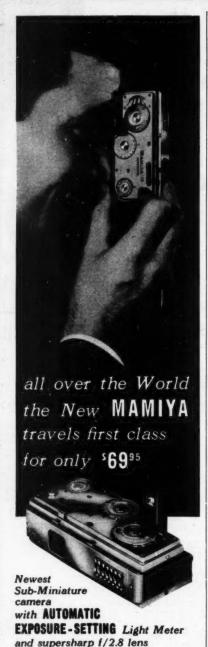
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ARTIST PORTRAITS

(Continued from page 126)

unshot. Perhaps Liberman wanted the artist in a certain position, a characteristic pose that he hasn't assumed. He does not force reality. There will be another time—if not this visit to Europe, perhaps later in the year, or next. Perhaps next time the artist will know him better, be slightly more relaxed.

It would be patently unfair to say that Liberman goes through all these tortures with each subject. He doesn't. Many artists he has known for years. He has evolved friendships with them. But there are the others. The example given, while not the rule, certainly is not the exception either.

Liberman's Kodachrome will be processed by Eastman Kodak in Europe or back in the U. S. The Plus-X will be sent to Bernard Hoffman Laboratories in New York City. There will be little trouble since all shots were made at normal exposures. There may be a bit of difficulty with some dense electronic flash work. Liberman never quite trusts guide numbers, always tries to make sure by increasing exposure. Sometimes he would do better to trust the guide numbers more.

Using straight prints

Now Liberman has full contact sheets of all his black-and-white work on his desk. He examines each frame with a magnifying glass. He is shocked at the amount of overshooting he's actually done, but he finds a number of shots which look promising. From these he orders straight 11 x 14 prints which he plans to use purely as a guide to the final prints. More often than not, the guide prints please him. That's because all Liberman wants on the enlarging paper is purely what was before his camera and nothing more. He doesn't believe in superimposing darkroom trickery over the reality of the straight print. Occasionally his pictures are cropped to emphasize an important gesture, to center or highlight the principal picture interest.

"Accident and chance play an enormous part in getting the picture," admits Liberman. "That doesn't mean that all pictures are accidents. Actually a good picture will generally result only if the photographer has an intense sensitivity in the presence of the subject.

"In photography, I have no artistic theories at all. I don't know what makes a striking picture. I only know what I like. I don't invent my own composition. I don't try to improve what I see. That is aesthetics and I leave that to the artists. The photographic document must grow from the accidental meeting of the photographer, the place, the light, and a given moment of time."—THE END



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SUPER 21/4 REFLEX

(Continued from page 83)

get it focused at 6 ft. for portraits. The longest lens adapted for the Multiscope was a 210mm f/6.3 Actinar (ID, \$58.45) available from Aetna Optix.

While at Sterling-Howard, a new 180mm Meyer Primotar f/3.5 lens in preset focusing mount caught our eye—at \$89.95 in a Master thread (3B). We passed by what might have been quite a lens—a 7½-in. f/2.5 Aero-Ektar in Master mount (\$89.45)—since the mount itself was fairly heavy. Just so the wide-angle devotees would not feel left out, we found at another store a 52mm Kalimar f/3.5 lens (2B) for \$79.50 that could be adapted to a Master Reflex for \$15.

Finally our Super Reflex system was ready for assembly and field trials. The Master, S.O.M. Bellows and 240mm f/4.5 B & L Tessar were an instant hit with all photographers in and out of the office. The giant super close-up portraits it could render plus its extreme covering power and definition were exciting indeed. For the Multiscope, the Leitmeyer 195mm f/4.5 worked equally well although you must keep light from shining into it since flare is always a problem with uncoated lenses. We planned on having it coated for \$10 or so at a later time. With the 135mm Tessar we made the extremely sharp super close-up of the snail on page 83. Close-ups with slightly greater ratio than 1:1 were possible and the lens focused from there to infinity. It seemed to us to be an outstanding all-around combination.

The Meyer Primotar 180mm f/3.5 in focusing mount for the Master was another instant hit since the preset mechanism allowed it to be handled quite efficiently and rapidly. By using one or two sections of extension tube between the camera body and the Primotar we could focus as close as 6 ft. or so, producing an image on the

ground glass of startling proportions. When using any of the lenses on the bellows you will simply have to do without the preset mechanism for closing down the lens before taking the picture. However, with a little practice, you can easily stop the lens down by flicking the small aperture indicating lever or twisting the aperture ring. It takes only a split second to look at the scale and set the exact opening you want.

It's easy to handle

Incidentally, we think you'll find focusing with the knurled knobs of the bellows unit quite handy. It's amazing how easy it is to handhold a camera with bellows and lens. 'Twas a difficult task indeed to get the Master Reflex away from some of Modern's doubting Thomas friends once they got the hang of it all. We recommend two camera accessories (see illustration, page 82). The Rolleiclear ground-glass focusing screen will brighten up the ground-glass image considerably, producing an evenly illuminated focusing area from corner to corner. Installed, it's about \$10 from most camera repairmen. A second accessory, the Accura Magnihood (\$2.95), excludes all extraneous light from the focusing screen and in addition includes a binocular viewing system. However, the Magnihood with binocular optics didn't work well once the Rolleiclear was installed. If it's a case of choice, we'd say that the Rolleiclear is the more important accessory.

Throughout this article, we've quoted maximum prices. By browsing, taking your time (which we were not), you should be able to pick up such items as a Master body without a lens, a 135mm lens in a broken Compur shutter (you'll be using the camera's shutter anyway) and so on. The number of alternative lenses you can wind up with is infinite. And if you do find a more versatile $2\frac{1}{4} \times 2\frac{1}{4}$ camera outfit at the price, I'll eat my hat—HERBERT KEPPLER

COLOR FILMS

(Continued from page 91)

exposing the other two. The bottom layer, however, will control the amount of red in the white light which is later to be passed through the film. That white light is to be changed to red. Obviously the bottom layer must pass a lot of red light and the top two must absorb green and blue heavily. This means that where the most light exposes the bottom layer, the least dye must be formed; and where no light strikes the upper two, the most dye must result. Similar considerations hold for all other colors, and we find that the requirement is a positive image in each layer exactly recording the relative brightnesses of the blue, green, and

red parts of the light from the scene. This has been considered in some detail because it is always the positive which is wanted, and in some cases we shall find that the camera film produces a color negative and then has to be "printed" to get the final result.

Returning to the exposed camera film, we found that red light gave exposure only to the bottom layer. If this is developed in a developing solution that produces silver only, we obtain a heavy deposit of silver in the bottom layer and none in the other two. That is, it produces a negative. If the camera film is to be used as the final picture, however, this is not what we want. There are three ways of proceeding to the desired result.

(Continued on page 134)



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COLOR FILMS

(Continued from page 132)

These three ways of proceeding correspond to the three kinds of film.

In the first type of film mentioned. the bottom layer is coated containing the maximum desired amount of red absorbing dye, the middle with green absorbing, and the top with blue absorbing. After development of the exposure to silver, dye is then bleached according to the amount of silver present. All the silver is then removed leaving the three required dye images. In description this is one of the simplest of the "reversal" processes, so-called because the original tone scale developed to silver is reversed in the final result, light areas taking the place of dark, etc. Unfortunately, this approach has a number of difficulties that have precluded any great commercial success in this form. Among others is the fact that it is difficult to expose all the way through a layer by blue light, for example, when that layer contains a very large amount of blue absorbing material.

How Kodachrome is processed

The first really successful color film for the general photographer produced in this country made use of a dye coupling system in which the couplers are introduced in separate developing solutions. In this process the exposed film is first developed to the silver negative image in all three layers. Use is then made of the fact that there was originally a constant amount of silver compound per unit area. When a lot of silver has been reduced to metal, there is very little unaltered material left: when no silver has been produced, there is the original amount, etc. This residual material is still sensitive to the color of the exposing light. Accordingly it is possible to re-expose the top layer to blue light and develop it with a solution that will produce a blue light absorbing dye, the red layer to red light followed by formation of a red light absorbing dye, and so on. In this way, after removal of all the silver, the positive image remains.

The third technique involves a film more difficult to manufacture. In this material the coupling compounds that will later form the dyes are mixed with the proper emulsions in the required amounts before coating. The exposed film is then developed to silver first in a developer solution which does not react with the couplers. The remaining material is then exposed to white light and developed in a developer which does form dyes in all three layers at once. The silver is then removed as before.

All of these methods lead to transparency films which can be projected by white light in a darkened room or viewed over an illuminator—THE END

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MOVIE MAKER

(Continued from page 112)

In one scene, Chaplin is shown working on a production line. His job is to tighten two bolts. He misses one and finds himself racing up and down like a demon to correct the omission and at the same time keep up with the machines that follow.

You could apply this idea to a wife at work cooking dinner-watching several pots on the stove. All of them need attention at once-with the resultant confusion.

Because the camera lens can isolate a particular subject from its surroundings, it can often accent a humorous situation so sharply that we finally see it for what it is.

Humor through emphasis

Imagine a football game. The stands are roaring, the players smashing against each other, the coach going through all sorts of mental torture. Use selective focus to make the background unrecognizable. Concentrate the lens on the coach-shooting every contorted, painful expression. Without the stands and the players to lend seriousness to his actions, we just may have a rather comical figure.

The beach is a wonderful place to shoot humor. In a film I made some time ago, there's a quick succession of shots of people sleeping, eating, wearing silly hats, fishing, or just wading. In real life, the individual actions would be lost in the crowd. Brought together by selective photography and fast editing pace, they become quite typical of the humor at any beach.

Perhaps these are two important keys to humor-selective shooting and thoughtful editing. But equally as important to the success of a film is the exercise of good taste on the part of the film maker.—THE END

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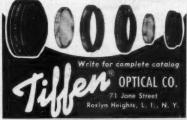
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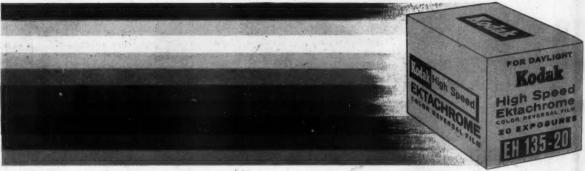
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